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PARTIAL GASTRECTOMY

A REVIEW OF 320 CASES

BY

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In 1879 Pean performed the first gastrectomy; two years later Billroth reported the first successful case of pylorectomy and Wölfler did the first gastro-enterostomy, following the suggestion of Nicoladoni. Thus surgery entered into competition with medicine in the treatment of gastric lesions, and the intervening years have seen successive waves of opinion in favour of one or other form of treatment follow one another with such bewildering rapidity that it would take a medical Einstein to produce a formula which might lead to a conclusion unbiased by the particular mental standpoint of the observer.

In the past ten years there have been two peaks of medical interest—first, the reintroduction of intensive alkalinization, and recently, following the work of Aron, treatment by histidine. On each of these occasions the responsible surgeon and the conscientious practitioner must have felt at a complete loss to know what advice to give their patients, for who would dare advocate operative measures if the lesion could be permanently cured by simple dietetic and medicinal means? In the former instance the dilemma was solved by the passage of time, as surgeons found that most of the cases they were called upon to handle had already had a course of alkaline treatment. We are even now passing into a similar stage with regard to histidine, but its introduction is too recent to allow of any *ex cathedra* statement.

For this reason it seemed that the present was a suitable time to review the position of gastrectomy, but I was influenced in this decision by two other factors: the passing of the three hundredth case provided a convenient milestone and a sufficiency of material to reduce statistical errors to a comparatively small amount; in addition there was the desire to answer certain correspondence that followed the publication (Lake, 1928) of a much smaller series of cases in which a fairly high percentage of successful results was claimed. Thus Hurst (1928) commented: "Experience shows that the 'last' results—that is, after an interval of ten years or more instead of five years or less—would give a much greater number of unsatisfactory results." I have found it difficult to curb my impatience while waiting for the necessary interval to elapse which should provide the answer to this criticism, but I am now in a position to include a fair number of cases of over ten years' duration in this review. As will be seen later they fortunately do not support these gloomy prognostications.

The practitioner cannot be expected to be intensely interested in the technical details of the operation, however important to the surgeon they may be, and so in this article I shall limit the scope to a consideration of the effects of the operation, the results achieved, the risks involved, and such views of the aetiology of ulceration as have arisen from a study of the cases.

The total number of operations reviewed in the series is 320; so far as possible we have attempted to follow the cases for long periods and to carry out such post-operative investigations as appeared necessary or likely to provide information upon particular problems. The "follow-up" system has not been as efficient as I had hoped; in particular the industrial and financial crisis of 1932, with its consequent movements of the population, had a marked influence upon the continuity of the records. The number of cases followed for over five years is thus reduced; but this does not of course affect the immediate statistics relative to mortality, etc. A statistical study of the available figures has been made from many different angles, but only those will be given here which bear upon the particular points under consideration.

The lesions for which the operation has been performed may be divided into ulcers (gastric, duodenal, and pyloric), jejunal anastomotic ulcers, and carcinoma. The subdivision of ulcers into three instead of the more usual two types is a method which I have for long adopted, on account of the fact that in many large ulcers it is impossible to say on prima facie evidence where they arose. Commonly they are assumed to be duodenal, since gastric ulcers on the pyloric ring are held to be rare. I should have regarded this point as of but small significance had it not been that the mortality statistics quite unexpectedly showed it to be of some importance.

Lesions for which Partial Gastrectomy was Performed

Gastric ulcers	115
Pyloric ulcers	56
Duodenal ulcers	71
Jejunal ulcers	27
Carcinoma	51
	320

Such a list, however, fails to indicate that some of the gastric ulcer cases had progressed to hour-glass contraction (eleven cases); that some of the pyloric and duodenal ulcers had caused obstruction with dilatation of the

stomach (twelve cases); and that, apart from cases of jejunal ulcer, several had had previous gastric operations (perforation ten cases, gastro-enterostomy eight cases, local excision two cases). Nor does it show what, in my opinion, is a much more important feature, especially from the aetiological point of view—namely, that in a considerable proportion of instances the ulcers have been multiple.

I have previously pointed out that the surgeon whose practice includes but few gastrectomies is unlikely to be impressed by the frequency of multiple ulceration, since he has no opportunity of examining carefully the mucosa of the stomach but sees or feels merely the ulcer which is most active at the time of operation. Investigation of the parts removed by gastrectomy demonstrates that multiple ulceration has occurred in 40 per cent. of cases and that the combination of gastric and duodenal ulceration is by no means uncommon. Usually one ulcer only is active and the others are represented by thin scars, which give no indication of their presence on the exterior. By many the aetiology of duodenal and gastric ulceration is thought to be separate, but this view cannot be held if these findings are recognized. The only logical standpoint would seem to be either that one is dependent upon the other or that both are due to some common cause. While studying this series it has at times appeared that there might be some sequence of events, the duodenal ulcer with its higher acid curve preceding the gastric ulcer with its lower curve, but the observations have been of too vague a nature to enable any definite deductions to be drawn. Mills's (1917) studies of bodily habitus in relation to disease have led to the suggestion that the broad-chested, active, hypersthenic type, forceful both mentally and physically, is prone to the development of duodenal ulcer, while the asthenic individual tends to develop gastric ulcer. The theory is an intriguing one, and fits in well with modern ideas of physiological types, but there is little indication in this series that more than a small proportion of the cases conform to these types; many of the duodenal ulcers occurred in asthenic types. The theory is probably fundamentally correct, but the exigencies of modern civilization so complicate the issue that in practice it is of little value as a guide. Indeed the frequency with which gastric and duodenal ulcers are found in the same case shows that Mills's ideas can only be applied as a statistical approximation when large numbers are under consideration.

Aetiology

It would be as well here to consider one or two points in connexion with aetiology. There seems to be a general consensus of opinion among physicians and surgeons alike that eventually peptic ulceration will be treated by medicinal, or possibly by prophylactic, measures. This stage will not, however, be reached until more knowledge of the aetiological factors is obtained.

There are few manipulations to which the experimental animal can be subjected which do not produce a lesion of the gastric mucosa; injections of drugs, toxins, cytolysins, irritants, bacteria; excision of adrenals, thyroid, liver; interference with the nerve supply or with the central nervous system; changes in the blood supply or its composition; traumatization of the mucosa; production of pyloric stenosis, and other operative procedures. These methods, however, cause acute ulcers, which heal so rapidly as to make experimental observations difficult. Mann and Williamson (1923), by experimentally altering the normal relations of the alimentary canal, were able to produce chronic ulcers which were attended with the complications seen in human cases, notably haemorrhage and perforation. It must be stressed that great caution is necessary in drawing analogies between chronic ulceration in human beings and that in experimental animals, for in the latter profound metabolic changes must result from disturbing the normal relation of the stomach to the intestine. Following upon this work Aron (1933) conducted experiments which seemed to show that the duodenum supplied an important digestive element, the absence of which causes deprivation of the acid amines essential to life. The final stages in the digestion of proteins into simple amines is brought about not by the pancreatic juice but by the duodenal secretions. The amines which cannot be synthesized in the body are chiefly lysin, tryptophan, and histidine. Aron found that of these histidine could prevent ulceration in dogs subjected to the Mann-Williamson operation. Subsequent clinical trial with histidine has produced conflicting results. My own experience does not support the claim that histidine has a curative effect in cases of peptic ulceration. Many patients come to operation who have had several courses of this treatment. Apart from this, experimental work by Morton (1927) is in direct opposition to Aron's hypothesis that histidine protects the mucosa from attack by the gastric juice. Morton's researches, indeed, support the theory that the acid secretion is the most important single aetiological factor in peptic ulceration, combined with the trauma of forcibly ejected gastric contents—a theory suggested by Bland-Sutton many years ago. Experiences with cases of gastro-colic fistula, almost the equivalent in human cases of the Mann and Williamson experiment, are also in direct conflict with the theory. The part played by pepsin is not clear. But my own investigations suggest that the secretion of pepsin follows that of acid. As secretion of gastric juice is so dependent on psychological factors the interpretation of the reaction to a test meal is by no means free from fallacy. It is, however, generally agreed that the stomach in duodenal ulcer is hypertonic, hypermotile, and hypersecretory, and that the reverse is true in gastric ulcer—at all events in the chronic cases.

The link between these variations of secretion and motility in peptic ulceration would, it seems, be in the central nervous system: a theory that has experimental support. Cushing and others have shown that lesions in the hypothalamus are frequently associated with peptic ulceration, and it may be noted here that in this region is the controlling centre of the sympathetic system. It is well known that the progress of a peptic ulcer is affected by the emotional state of the patient, and that this is closely coupled with sympathetic activity. In this connexion it is undoubted that vasomotor effects also must play an important part in the aetiology of peptic ulceration.

It looks as if the riddle of peptic ulceration will ultimately be solved by reference to the autonomic control of the stomach and duodenum; and as the final transmission of nervous impulses is through a chemical intermediary, hormonic and chemical factors will come into the aetiological picture. Until these various problems have been solved and a rational medical regime made possible many cases of peptic ulceration will still be best treated by surgical measures.

Mortality of Partial Gastrectomy

It might be thought that the mortality rate of an operation would be the most definite and easily arrived at of all the statistics connected with its performance. A study of the published figures, however, soon reveals that it is

almost impossible to establish what may be considered a fair average general rate. The following list, for instance, indicates that the most careful scrutiny is needed before a mortality rate can be accepted.

Reporter	Cases	Mortality Percentage	
Moynihan	164	1.6	
Garnett Wright	62	4	
Morley (Polya)	47	6	
Bastianelli	137	1.5	
Schwartz	210	18	
von Haberer (Billroth II)	134	11	
Finsterer	175	4	
De Takats	226	5.4	
St. Bart's: Ulcer	207	16.9	18.6
St. Bart's: Carcinoma	67	25.5	

In the items in this list, where the total number of cases is less than one hundred, an error due to the small numbers may have crept in, for it is within my experience that as many as sixty consecutive cases may be performed with but two deaths, but that when the number expanded to a hundred the mortality figure approached the general average of a large series. For this reason the smaller numbers can be ignored. With numbers above a hundred, however, this error gets considerably smaller, and it will be conceded that when a surgeon has performed over a hundred operations of this type he can no longer be accounted a novice, so that the figures are not subject to the criticism that the mortality might be considerably lowered with further experience. Even so we find in this series the utmost discrepancy. For instance, Schwarz with an experience of 210 cases gives a mortality of 18 per cent., whereas Moynihan with 164 cases has a mortality of but 1.6 per cent. Now it is impossible to believe that the skill of two surgeons of very big experience in the operation can be as different as these figures would lead us to think, and it immediately becomes clear that we must look for some other explanation. Either the mortality rate is a selected one from which certain cases are excluded—and in this regard it is of interest to note that the term "primary mortality" has unfortunately crept into some statistics—or the type of case chosen for operation is very different in the two clinics. To exclude from the operating list cases which look to be difficult and are bad operative risks may be regarded as good surgical judgement, but unless we have complete knowledge of how the refused cases fared without operation we are not justified in lauding a low mortality dependent upon such exclusion. So we are left in doubt as to the real mortality, and this quandary will remain until all surgeons agree to publish a complete mortality list without any equivocation or the introduction of such qualifying terms as "primary mortality." For these reasons, in dealing with the present series, I give first of all the total mortality from all causes whatsoever up to a period of three months after the operation.

In this way certain conditions only remotely connected with the operation have been included; indeed, the number of deaths due to intercurrent disease, such as pulmonary tuberculosis and uraemia, gives a percentage actually higher than the lowest figure in the above list for the deaths from all causes. It is this in particular which has made me suspicious of accepting these figures without qualification, for it must surely fall equally to the lot of every surgeon, experienced and inexperienced, to have such sequelae after an extensive abdominal operation, often of necessity performed upon patients in poor general condition.

The total number of deaths in this series reckoned in this way is as follows:

	No. of Cases	No. of Deaths	Deaths per cent.
Ulcer cases	242	23	9.5
Anastomotic (jejunal) ulcers	27	4	14.8
Carcinoma	51	7	14.0
Total	320	34	10.6

There was no immediate mortality—that is, within twenty-four hours—in this series.

When the ulcer cases were further subdivided into their separate groups an interesting result was obtained. The mortality rates then were: gastric ulcer, 11.1 per cent.; duodenal ulcer, 11.4 per cent.; pyloric ulcer, 5.3 per cent. This considerable difference in the rates was unexpected and obviously needs explanation. The gastric and duodenal cases include the very difficult ones where the ulcer is close to the cardiac orifice or extends from the duodenum into the pancreas or liver. These are the cases which technically tax the surgeon's abilities to the maximum, and it is only to be expected that the mortality would be above the average. The ulcers in the vicinity of the pylorus, on the other hand, constitute the easier cases, usually quickly performed without difficulty. As a corollary it is obvious that the surgeon who so chooses his case as to include a large proportion of these pyloric ulcers will show a lower mortality than one whose choice is made on a wider basis.

Causes of Death

The causes of mortality are always worthy of study, for only in this way can technique be improved. Payne (1936) has recently published the results of the post-mortem findings at St. Bartholomew's Hospital. He found that the commonest causes of death were peritonitis and pneumonia (thirty-two and fifty-one cases), while shock and infection around the duodenal stump accounted for a further nine deaths.

In the present series the list is as follows:

Chest complications, including embolism but excluding tuberculosis	12
Pulmonary tuberculosis	2
Haemorrhage, internal and intraperitoneal	4
Leakage and peritonitis	6
Thyrotoxicosis	1
Uraemia	2
Influenza	1
Delayed shock	1
Rupture and resuture of wound	1
Intussusception, anastomosis into jejunum	1
Damage to mid-colic artery	1
Embolism from haemorrhoidal and internal iliac veins	2
	34

It will be seen that in five cases death was due to the lighting up of intercurrent disease (tuberculosis, uraemia, and thyrotoxicosis), while in three others (influenza and thrombosis of haemorrhoidal veins following enemata) it was only very indirectly connected with the operation. If these be excluded twenty-six operative deaths remain (8.1 per cent. for all the cases, or 7 per cent. for the ulcer cases. When the patient is otherwise healthy, therefore, this figure may be taken as a fair representation of the risk. If the surgeon chooses his cases to exclude the very high ulcers and the complicated duodenal ulcers this mortality may be halved, but it should not be overlooked

that the need for radical treatment is often greatest in the cases which would thus be excluded.

As in Payne's series the greatest risk is of pulmonary complications, with leakage and peritonitis coming second. The former are due more to the operative manipulations than to the anaesthetic used, and so it is not surprising to find that, although almost every known type of anaesthesia has been tried, there has been little variation in the mortality.

Results

The results in the ulcer cases must be considered to be very satisfactory; 198 cases have been followed for two years upwards, and of these only fifteen are unsatisfactory. A further investigation of the unsatisfactory cases showed that in over 50 per cent. (eight cases) a second condition was present to account for the symptoms; thus four cases had cholecystitis and two had colonic spasm. In the remainder the result is unsatisfactory on account of persistence of symptoms. Four were thought to have jejunal ulceration. In two of these exploration was undertaken; one revealed a small ulcer on the lesser curve proximal to the anastomosis and close to the cardia, the other had no abnormality of any sort. Three definite cases of jejunal (anastomotic) ulceration were operated upon elsewhere, one having perforated, and they are included in these results.

A further analysis indicates that on the whole the more severe the lesion the better the result. This is not to be explained on the psychological basis that the patient who has suffered intensely is inclined to exaggerate the quality of the relief afforded him, for in most instances there has been absolutely no pain or discomfort after the operation. It also appears that the percentage of unsatisfactory results is larger in the duodenal cases than in the gastric ulcers. Since, however, the majority of duodenal cases give satisfactory results, I believe the explanation of both this and the previous anomaly to be that a certain number of misdiagnosed cases are included, particularly cases where a small duodenal ulcer (probably completely inactive) is found at the operation, but the patient's symptoms are really due to other causes. With gastric ulcers, for obvious reasons, this error is less likely to arise. The inclusion of but a small number of such misdiagnosed cases in a series of this nature is sufficient to account for the less satisfactory results in the duodenal cases and for the better results in the larger and more obvious lesions.

A small group, otherwise satisfactory, complain of a transient feeling of biliousness before breakfast or of faintness after a heavy meal. These cases have been investigated without any physical abnormality being discovered. I cannot help thinking that such symptoms may be due to involvement of the gastric branches of the vagus in the stomach scar. But it must not be overlooked that an extensive operation often has a bad psychological effect. Some patients remain excessively apprehensive in the epigastric region for long periods, even permanently.

Effect on the Blood

The functions of the stomach as a haemopoietic agent are now well understood, and it might be expected in consequence that an anaemia, even a pernicious anaemia, would follow gastrectomy. In fact, for reasons that are not yet clear, there is very little change in the blood count. In this series a large number of post-operative blood counts have been undertaken, but there is no record of any case of pernicious anaemia as yet. Since twenty-seven of the cases are of ten to fifteen years' duration it might be expected that any reserves or store of haemopoietic substance would long since have been used up, if the pyloric end of the stomach is their only source. These are matters of medical interest; it is sufficient for the surgeon to know that experience shows that the dire results prognosticated ten years ago do not follow the operation. A mild microcytic anaemia does follow in some cases, but it is rarely severe enough to attract attention. An average of a large number of counts gave the following: red cells, 5,190,000; white cells, 9,390; haemoglobin, 95 per cent.; colour index, 0.88.

The Test Meal

The effect of the operation upon the test meal has been intensively studied. At the outset it must be realized that the performance of a test meal upon the post-gastrectomy case is associated with certain technical difficulties which render the results suspect. In this investigation every care was taken to ensure that the specimens were really obtained from the stomach stump and not from the intestine beyond.

Where a large Polya anastomosis has been performed there is almost always complete achlorhydria. With a restricted orifice there is in some cases a small amount of acid (15 degrees to 20 degrees) present in the one-hour specimen, but the general reduction of acidity is profound. Working on these cases Adler (1930) showed that even the completely achlorhydric cases retained the ability to respond to histamine stimulation, the test meal often showing over 20 degrees of acidity as a result of the injection. The same cases tested after a year or two had, however, lost the ability to respond. It was supposed that this might be attributed to a disuse suppression of the hormonic mechanism. Extracts prepared from the portion of stomach resected had no obvious effect.

Barium Meal

The radiographic results of the various types of gastrectomy were discussed by Shanks (1934) at the Bournemouth meeting of the British Medical Association. I cannot do better than quote from his paper:

"Polya; Lake's Modification. This modification, judging by the radiographic appearance, controls the efflux of the gastric contents better than any other of the Polya type. In addition to preventing 'dumping' into the jejunum it renders reflux into the afferent loop very improbable. The gastric stump fills reasonably well in the erect position, and the stoma is clearly seen at the lower pole. The right border of the stump is formed by the remaining portion of the lesser curve and the sutured end of the stump above the stoma. This largely loses its initial angularity, and becomes more or less straightened out. At the junction of the two there is apt to remain a dimple, which must not be mistaken for a recurrent lesser curve ulcer."

Results in Carcinoma Cases

The most important conclusion reached in this group is that there appears to be no absolute relation between the size of the growth and the period of freedom from recurrence, provided that there is no widespread metastasis at the time of operation. In this series two cases of massive carcinoma, several inches in extent, are known to be free from recurrence for seven and nine years respectively, while another, in a young man, did not recur until six years had elapsed. The average duration of life after the performance of the operation has, however, been but two and a quarter years. The freedom from symptoms to within a short time before death has been gratifying, and makes it advisable to continue with the operation even when the presence of secondaries beyond the possibilities of removal is discovered.

Operation

It is not intended here to enter into a technical description of the various operative details, but a brief account of the operation I now perform is necessary. This has been evolved slowly over a period of years, and, although it gives a result which is not unlike that of the Finsterer operation, it was devised entirely independently, each separate modification being introduced in an attempt to avoid some observed defect or fallacy in the cases previously dealt with.

The anaesthetic is a high spinal percaine given by a modification of the Howard Jones method, which enables very small doses to be used. The majority of cases have no other anaesthetic, but gas-and-oxygen is not denied to those who are psychologically unfitted to remain conscious. In an early stage a local injection of percaine is given around the oesophageal orifice of the diaphragm to diminish the nauseating sensation produced by traction upon the vagus. The proximal line of division passes very obliquely across the stomach from as high up the lesser curve as is technically possible, to a point on the greater curve at the junction of the epiploic arteries. In the average case this means that about two-thirds of the stomach is removed. The distal section is placed across the duodenum about an inch beyond the pylorus, unless the presence of a large ulcer here makes a more distal division necessary. In a few cases a colossal ulcer here renders section of the duodenum impossible, and then the stomach may be cut across proximal to the pylorus, a modification advocated as a routine by Ogilvie. This modification is not to be recommended, however, for any other than the most difficult cases. Similarly the proximal line of section may, under exceptional circumstances, leave a very high lesser-curve ulcer and yet a good result may be obtained, but this is also a device to be adopted only in the face of great technical difficulties.

The anastomosis is a retrocolic one, the first coil of jejunum being passed through an aperture in the mesocolon, which is usually to the left of the midcolic artery. The proximal end of the coil is attached to the lesser curve so that the bowel descends across the cut end of the stomach. The stoma now made in the bowel is equal in length to but half, or less, of the width of the stomach and is situated at the lower end of the anastomosis. Suturing is continuous, but is performed in such a manner as to close the upper portion of the stomach aperture and to fix the uncut portion of the jejunal loop over the suture line. Extra sutures are placed at the lesser curve as a precautionary measure and to attach the anastomosis to the aperture in the mesocolon.

A small drain may be used in cases where there is much oozing or where penetration of the pancreas or liver by the ulcer has rendered cauterization of these organs necessary. Careful after-treatment is essential, and no operation of this type should be undertaken without preliminary transfusion if the haemoglobin percentage is under 60. With spinal anaesthesia shock is slight and patients usually leave the table with an extremely good pulse. The operation may take anything from thirty-five to seventy-five minutes, but while no time should be wasted it is a mistake to scamp any part of the operation for the sake of saving a few minutes.

Indications

The indications for the performance of a partial gastrectomy may be absolute or relative. Carcinoma in the absence of widespread secondaries falls into the first group, but this should also include cases of gross gastric ulceration. All other gastric ulcers which have not rapidly yielded to medical measures, and where the technical difficulties are not insuperable, should in my opinion be given the choice of a gastrectomy. Established duodenal ulcers without obstruction and with a high acid curve also form an indication, but those with pyloric obstruction and a low curve do so well with a gastro-enterostomy that it would be a mistake to subject them to the more risky operation. For anastomotic ulcers following gastro-enterostomy a gastrectomy is the only treatment likely to give permanent relief: some of the most gratifying results in this series come into this group.

Good surgical judgement, however, demands that many other factors connected with the patient's general condition be taken into consideration before the question of operation is finally decided.

Summary

1. Three hundred and twenty cases in which the operation of partial gastrectomy has been performed for gastric, duodenal, and anastomotic ulcers, and carcinoma are reviewed.

2. The after-history of the cases has been studied for periods up to fifteen years after operation.

3. Some aetiological ideas arising from the experiences of the cases are discussed.

4. The gross mortality from all causes was: ulcer cases, 9.5 per cent.; anastomotic ulcers, 14.8 per cent.; carcinoma, 14 per cent.

5. If an ulcer is situated in the pyloric region the mortality of the operation is but 5.3 per cent.

6. The commonest causes of post-operative death are lung complications and peritonitis.

7. The incidence of jejunal ulceration after partial gastrectomy is less than 2 per cent.

8. No cases of post-operative pernicious anaemia are recorded, but a microcytic anaemia of mild degree is occasionally seen.

9. The general permanent results in the ulcer cases are probably better than those obtained by any other method of treatment.

10. The average duration of life in the carcinoma cases after operation was two and a quarter years, but some patients with extensive growths lived for as long as seven and nine years.

11. The effects of the operation upon the test meal and the barium meal are described.

12. A brief account of the type of operation performed is given.

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TESTS FOR RENAL FUNCTION

BY

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Three tests commonly employed for estimating renal function are the blood urea and urea clearance, the phenolphthalein test of Rountree and Geraghty (1910), and the maximum specific gravity of the urine. These tests have been carried out in sixty-four cases under my care in which it was thought that impairment of renal function might be present, and I have attempted to compare the results. The tests were made in three general hospitals by the laboratory staffs, in the course of their routine work. The patients investigated were suffering from acute glomerulonephritis (eight cases), chronic glomerulonephritis, benign hypertension, and hypertension with nephritis (malignant hypertension). This classification is at any rate descriptive of the types of cases. Oedema was present to a greater or lesser degree in all the cases of acute nephritis, but, apart from this, nephritic oedema was uncommon. Three patients had slight oedema, which was thought to be cardiac in origin.

Similar investigations have been reported by several other writers. The urea clearance test is usually regarded as the most accurate measure of renal function with the exception perhaps of the creatinine clearance test, with which it has been found to agree (Cope, 1931) if the original conditions mentioned by Addis—namely, diuresis and a raised blood urea—are adhered to; and Cope attributes the failure of Hok Lan Ong (1932) to demonstrate this parallelism to the fact that he did not observe these conditions. The normal value for the Van Slyke urea clearance (McIntosh, Möller, and Van Slyke, 1928) is 75 per cent. normal or over, and this was the clearance test used in this investigation. The phenolphthalein was given intravenously and the urine collected for two hours. The normal is 60 to 80 per cent. The fractional phenolphthalein test (Shaw, 1925; Chapman and Halsted, 1933) is said to be a better method. The maximum specific gravity test used was as described by Fishberg (1934), and is a modification of Volhard's (1918) test. The normal is 1020 and over. The modification introduced by Lashmet and Newburgh (1932) is claimed to be more sensitive, but it is more troublesome to carry out. One per cent. of dissolved protein in urine increases the specific gravity by 0.003, and an allowance must be made for this. It is recognized that in the presence of oedema the value of the maximum specific gravity test is diminished, and this must be borne in mind whenever it is being compared with other tests.

Analysis of the Cases

I have divided the sixty-four cases into two groups for the purpose of making a few comparisons between the renal function tests and the clinical signs presented by the patients. Group A (thirty-three cases) contains those cases in which one or more of the renal tests showed distinct impairment of function, and Group B (thirty-one cases) those in which no such impairment was demonstrated. Those in Group A were for the most part more seriously ill than those in Group B, but there was clinically no difference apart from the renal tests between some of the cases included in Group A and some in Group B. Twenty-nine of the thirty-three cases in Group A had, resting in bed, a systolic blood pressure of 180 mm. or over, as compared with seventeen of the thirty-one cases in Group B. Retinal changes, usually small haemorrhages, swelling of the disks, and white spots were observed in fourteen of the Group A cases and in only three of the Group B. Red blood cells were present in the urine of fifteen of the Group A cases, as compared with seven of the Group B. Blood counts were unfortunately only carried out when anaemia was thought to be present. There were twelve of the Group A patients in whom a haemoglobin value of under 80 per cent. was found and of the Group B patients only two, but these results are not strictly comparable. From the comparisons I have made and from a consideration of the symptoms of which the patients complained I concluded that renal function tests did, in many cases, give a good estimate of the patient's condition, but, on the other hand, often there was little correlation between the tests and the clinical examination.

Group A

Montgomery (1936) as a result of his investigations states that "sufficient emphasis has not been laid upon the necessity of interpreting [the urea clearance] results in relation to their blood urea concentration." In grouping the results of the renal function tests I have made use of the blood urea where possible. The sixty-four patients investigated were all conscious and able to give sufficient co-operation. Six had a blood urea of over 100 mg. per 100 c.cm. of blood, and in each case the urea clearance was under 16 per cent. and the phenolphthalein under 11 per cent.; five were chronic cases. In four of the six cases the maximum specific gravity was between 1010 and 1012; in the fifth case, a patient who was admitted with a blood urea of 135 mg. and who later died of uraemia with a blood urea of 216 mg., the maximum specific gravity was 1018. This last case was probably an acute nephritis, as the illness was said to be of short duration, marked oedema was present, and the urine was much diminished; but, on the other hand, the patient was 60 years of age and her systolic blood pressure was 205 mm. I did not detect any retinal changes. The sixth case was one of chronic nephritis passing very little urine, with a blood urea of 256 mg. and a maximum specific gravity of 1028. There was oedema of the lower limbs and in the back. This patient was able to concentrate the urine but was unable to secrete an adequate amount. In all six cases the blood pressure was over 200 mm., and the guaiac test or the microscopical examination of the urine showed the presence of blood.

There were twelve cases, two of acute nephritis, with a blood urea between 50 mg. and 100 mg. In ten of these, including the two cases of acute nephritis, the urea clearance was 35 per cent. or less. The urea clearances in the other two were 65 per cent. and 51 per cent., the blood ureas 50 mg. and 56 mg. Both were cases of chronic nephritis in which there was a little oedema thought to be cardiac in origin; the blood pressures were high and albuminuria was present. In one retinitis was found, and she has since died of cardiac failure. The maximum specific gravity was respectively 1014 and 1020, and the phenolphthalein 36 per cent. and 26 per cent. Clinically these two patients were as likely to have a clearance under 35 per cent. as many in whom this was found to be the case. The maximum specific gravity in this group of twelve cases was under 1015 in nine cases,

and in three it was 1020 or over: one of the latter was an acute nephritis with oedema, in another there was a slight degree of cardiac failure, and one patient died later of a stroke, but all three were cases in which probably there was some failure of renal function. The phenolphthalein results were below 60 per cent. in every case. It was evident that in most patients with a blood urea of 50 mg. or over the three tests gave readings below normal, but I was unable to make out any true parallelism between the extent to which the tests were depressed.

Of the remaining forty-six cases there were fifteen—two of acute nephritis—in which one or all of the tests showed some definite abnormality, in spite of the fact that the blood urea was in many cases normal and never as high as 50 mg. It is said that half the functioning kidney tissue can be removed before the blood urea shows any rise (MacKay and MacKay, 1927), and it was expected that there would be many patients with a normal blood urea in which other tests would demonstrate a loss of function. In ten of these the urea clearance was below normal, the exact figures varying between 32 per cent. and 65 per cent. In the other five the urea clearances were normal, the blood pressures were high, there was slight albuminuria but retinitis was absent, and there were no red blood cells in any of the urines when examined. In four of these five cases the maximum specific gravity was under 1020, and in two the phenolphthalein was below normal. There was slight oedema in two of these patients, which somewhat spoils the specific gravity test; but the other two had no oedema, the blood pressures were high, there was albuminuria, and it may well be that some degree of kidney damage was present. Of the fifteen cases, in four the maximum specific gravity was normal, and yet in these the urea clearance was decidedly low. In two of these red blood cells were present in the urine, another had retinitis, but the fourth had no retinitis and no red blood cells in the urine. In five of the fifteen cases the phenolphthalein was normal when the urea clearance showed a lowering of renal function. It will again be seen that the tests do not agree closely. It is clear that in many cases of renal disease any one test may fail to demonstrate loss of renal function and another show it to be present. Freyburg (1935) found among his cases of arteriosclerotic Bright's disease thirty-eight with impaired maximum specific gravity (Lashmet and Newburgh method, 1932) and only four with a lowered urea clearance. Perhaps his patients were not so ill as many in this investigation.

Group B

In the remaining thirty-one cases (Group B) the urea clearance, the maximum specific gravity, and the phenolphthalein were all normal or very nearly so. There were eight cases of acute nephritis, and in five of these the urea clearance and the phenolphthalein were reduced, in three to a marked degree as they were severe cases. In four of the eight cases the maximum specific gravity was 1020 or above that figure whenever taken throughout the illness. In two cases it was low, even on admission, and in two it was over 1020 on admission and dropped below this figure during the course of the illness. It was interesting to follow the improvement in renal function as the acute cases recovered. Cullen, Nelson, and Holmes (1935) found that in most cases of acute nephritis renal tests showed normal results one month after the cessation of acute symptoms. Alving and Van Slyke (1934) stated that in some cases of acute nephritis the maximum specific gravity failed to return to normal in spite of the fact that the clearances had reached normal figures; this was also observed by Freyburg (1935). Freyburg and Lashmet (1935) reported a case of mercuric chloride poisoning which recovered and in which the renal function tests were estimated frequently. The urea clearance was easily the most affected and dropped to 5 per cent., yet the non-protein nitrogen did not rise above 57 mg., and at the point when the clearance was 46 per cent. the maximum specific gravity was 1025 (Lashmet and Newburgh method, 1932) and the phenolphthalein 60 per cent.

Comparative Mortality in Groups A and B

Many cases have been followed up after leaving hospital. In Group A there have been during the past two years fourteen deaths, compared with three in Group B. Seven patients died of uraemia, two of apoplexy, three of cardiac failure, and two of pneumonia. In Group B two appeared to have died of cardiac failure and one of apoplexy. It was not possible to give an accurate prognosis from renal tests, as some cases went downhill faster than others and some severe ones maintained their position for a surprisingly long time. One chronic case when first seen had a blood urea of 46 mg., a clearance of 71 per cent., and a phenolphthalein reading of 35 per cent.; eleven months later the blood urea had risen to 120 mg. and the clearance had fallen to 14 per cent. In another case the clearance dropped in three months from 54 per cent. to 26 per cent. and the blood urea rose from 40 mg. to 75 mg. On the other hand many cases which had similar or worse renal readings when first seen are still alive and well. One case which I saw a year ago gave a phenolphthalein reading of 20 per cent., yet she is still alive, and the most recent test gave 36 per cent. The respective urea clearance results were 45 per cent. and 35 per cent.

Comparison of the Tests

In making a comparison one was struck by the fact that while on one occasion one test would seem to be the most sensitive, in another case it would seem to be the least sensitive. In many patients the maximum specific gravity appeared to be a very delicate test; in one case of uraemia, however, it gave a reading that was normal and in another nearly normal. The phenolphthalein often agreed with the urea clearance, but there were many occasions on which the one result was at variance with the other. In severe cases the agreement was good, both invariably showing marked reduction. The phenolphthalein is not regarded as a very sensitive test, yet in many cases, chiefly those with a high blood pressure, I found it to be apparently a delicate test, and low results were obtained more often than I expected. It was still more surprising to find that it sometimes showed an apparent loss of renal function before the urea clearance test. Lundsgaard and Möller (1925) believe that the dye output may be decreased in the presence of a high blood pressure, and this may account, in part at least, for the frequency of low readings in some of my cases. Chapman and Halsted (1933) state that they have observed cases of hypertension which showed depressed fractional phenolphthalein curves with few or no other signs of kidney disease, but have also seen normal curves in as many cases of hypertension in which there was no evidence of Bright's disease. Christian and O'Hare (1925) found that the two-hour phenolphthalein test did not demonstrate the earlier stages of kidney disease. MacKay and Rytand (1935) regard the phenolphthalein test as being of more value than the blood urea and the maximum specific gravity tests.

Chapman and Halsted (1933) believe the fifteen-minute phenolphthalein test to be more valuable than the two-hour test.

Elliot and Nuzum (1936) observed little correlation between the maximum specific gravity test, the phenolphthalein test, and the urea clearance test, and thought that what agreement there was between them was little better than could be expected as a chance occurrence. Riches and Robertson (1935) found the urea clearance to be a good index of renal function. Hutchison (1936) agrees with this view. Fowweather (1934) found it hard to establish even the normal clearance until he gave urea before the test. Van Slyke (1930) regards the urea clearance test as more accurate than the phenolphthalein.

None of these tests help us to give an accurate prognosis. Indeed, Elliot and Nuzum (1936) agree with Addis (1931) that none of the accepted methods of clinical examination can differentiate between patients likely to die in a year or two and those likely to live many years. Cope (1934) appears to hold a somewhat similar view. The rate at which renal function will depreciate varies from case to case, and Cope (1934) further states that even repeating the tests at intervals does not furnish information reliable enough to predict the course of the disease. This seems the more promising method. An increasing blood urea due to chronic nephritis means a bad prognosis, and, generally speaking, the higher the blood urea and the lower the results of renal function tests the sooner death will take place. The fact that tests of renal function are not all that one could wish for makes the ordinary clinical examination of the patient as important as ever it was.

Summary and Conclusions

Renal function tests have been carried out in sixty-four cases in which it was thought that kidney disease might be present. The tests used were the blood urea and urea clearance test, the maximum specific gravity test, and the phenolphthalein test. In the first group of thirty-three cases some loss of renal function was demonstrated, and the patients comprising this group were on the whole more incapacitated and death was commoner than among the second group of thirty-one cases, in which no loss of renal function was observed. Many of the cases were followed up after their discharge from hospital. On clinical grounds alone some of those included in the first group because of loss of renal function might have been included in the second group without causing the least surprise. The reverse is equally true.

With pronounced renal failure, as indicated by a high blood urea, the urea clearance and phenolphthalein tests showed marked depression of renal function, but this was not true of the maximum specific gravity. On two occasions it was normal, or nearly so, when the blood urea was over 100 mg. In both cases there was oedema and the patient was passing very little urine. The ability to secrete urine was at fault, but the ability to concentrate was normal. In some cases where renal function was apparently not nearly as severely impaired this test seemed to be very delicate, and the same may be said of the urea clearance test and the phenolphthalein test, each in some cases appearing to be the most sensitive. A surprising number of patients showed a lowered phenolphthalein excretion, but this may possibly be due to the fact that many had a high blood pressure. The lack of parallelism between the tests, especially in the lesser grades of renal damage, was most disappointing. None of them appear to be capable of enabling the clinician to give a very much more accurate prognosis than is possible from a knowledge of the blood urea alone. However, if any of the tests show marked loss of renal function in the absence of a raised blood urea it would probably be best to give a guarded prognosis. A re-examination of the patient in three months might help. Clinical examination will often furnish very valuable information, and must still be regarded as of the foremost importance.

To conclude, the failure of the tests to agree closely with one another suggests either that they are not completely reliable or that different renal functions are being measured.

The laboratory work was carried out by Dr. Loveday and Mr. Varley, M.Sc., A.I.C., of the Manchester Royal Infirmary, by Dr. Thomson of Salford Royal Hospital, and by Dr. Dawson and Dr. Smith of Crumpsall Municipal Hospital. It is a pleasure to thank them and the nursing staffs for their co-operation.

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E. W. Twining (*Brit. J. Radiol.*, April, 1937, p. 332) describes an ingenious way of converting the ordinary Bucky couch into a tomograph. Tomography, planigraphy, and stratigraphy are names given to those methods of radiography which aim at the sharp radiographic representation of a selected layer of the patient's body, while all the other layers situated in front and behind the selected layer remain diffusely outlined. This is accomplished by moving the tube and film during the exposure in such a manner that the projections of all objects in the selected layer occupy the same positions on the film, while the projections of objects above and below that layer are blurred by movement. The apparatus described by the author consists of a lever mounted horizontally upon a vertical axis, which transmits the motion of the *x*-ray tube reciprocally to the Potter-Bucky carriage. Its length is equal to the focus-film distance. Its axis is variable along the length of the lever in order to allow the selection of any desired plane of the patient's body. The author describes and discusses experiments demonstrating the accuracy of his apparatus and its applications to clinical radiography.

THE CAUSES AND TREATMENT OF RETAINED PLACENTA*

BY

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Retention of the placenta, with its common complication post-partum haemorrhage, is one of the disasters of child-bearing which even the most efficient ante-natal care cannot prevent. Before considering the causes of placental retention I would distinguish two entirely different conditions in which the placenta remains in the uterus: one is retained placenta, and the other is adherent placenta—much the more rare, having been reported in English journals on only two or three occasions.

Causes of Retention

Adherent placenta occurs when, for one reason or another, the spongy layer of the decidua is absent and the placenta finds direct attachment to the muscle wall (placenta accreta) or even invades the muscle wall (placenta increta). In neither of these instances will there be a line for cleavage, and so the placenta must adhere to the uterine wall. If this adhesion be complete there can be no danger of haemorrhage taking place, owing to the complete lack of placental separation. Repeated dilatation and curettage of the uterus and implantation over submucous fibroids have been suggested as predisposing causes, while incomplete adhesion may occur in the region of the uterine scars. The incidence of adherent placenta has been estimated to be from 1 in 6,000 to 1 in 40,000 births.

Retained placenta is a condition in which the placenta separates partially or completely, but because of some secondary complication (usually a mechanical one) is not expelled from the upper segment of the uterus. The commonest cause of placental retention is undoubtedly uterine inertia, and it is interesting to note that the use of forceps for delay in the second stage of labour often precedes a delay in the third stage. The presence of the placenta in the uterus is in itself a sufficient stimulus for the recurrence of pains in a short time after the delivery of the child. Weak pains are active enough to separate the placenta, but strong pains are necessary to strip off the adherent membranes and to push the placenta down the birth canal.

I believe that in most cases of delay in the third stage of labour the placenta is lying free in the uterine cavity suspended from the uterine wall by the membranes. This assertion is borne out at the operation of Caesarean section, when the placenta separates as soon as the child is delivered: on the other hand, its membranes are found to cling firmly to the uterine walls. This point requires emphasis, because it has an important bearing on the use of injection of the umbilical vein as a mode of treatment for retained placenta. Irregular contractions of the uterus (of which the best example is a contraction ring) may hold a placenta in the uterine cavity and act as another cause of delay in the third stage of labour. Such contractions follow interference—either internal interference during delivery, meddlesome interference with the fundus after the completion of the second stage, or, lastly, the injudicious use of pituitary extracts.

It was because the danger of over-zealous interference was realized that a rule for the conduct of the third stage of labour was introduced into the Leeds Maternity Hospital some years ago which forbade the touching of the uterus for twenty minutes after delivery of the child unless a free loss of blood merited fundal massage. Like all rules this one was bound to fail; in 1932 a patient bled to death owing to the filling up of her atonic uterus with blood, while no obvious outward signs of loss of blood were noted by the nurse in charge.

Nowadays a hand is placed above the fundus, not for the purpose of controlling it but rather to appreciate any changes which may take place in it: should it soften and rise in the abdomen, then gentle massage is applied to it in order to excite contractions of the uterus; should it harden and rise in the abdomen, then tests for the freedom of the after-birth are made. The estimation of the general condition of a recently delivered woman is a matter of considerable difficulty, for the amount of blood that she can lose without being upset varies greatly. The pulse rate may show an alteration of only five beats per minute after a loss of 1,700 c.cm. of blood. The blood pressure and pulse volume are much safer indices: a systolic blood pressure below 100 mm. suggests the need of salines, and below 80 mm. the need of a blood transfusion.

Certain mechanical factors may also act as causes of retention of the placenta. In placenta praevia the attachment of the placenta to the relatively inert lower segment and its consequent partial and delayed separation leads to post-partum as well as to ante-partum haemorrhage. Similarly, in hydramnios—quite apart from the possibility of associated uterine inertia—the placenta may be thin and may cover a large area, thus acting as a poor stimulus for uterine contractions. A patient is quite commonly received into the wards with a retained placenta and no bleeding in whom, after examination, the placenta is considered to be free in the uterine cavity, but its passage is prevented by a full urinary bladder: after catheterization expression is an easy matter. The presence of fibroids is another not uncommon mechanical cause of retained placenta; the retention may be due to the associated uterine inertia or the placenta may rest in a pocket formed from the uterine cavity which has been distorted by the fibroid.

Dangerous Methods of Removal

A placenta was said to be retained if it had remained in the uterus for two hours after the delivery of the child. This definition is adequate only in the absence of bleeding, for when there is post-partum haemorrhage it is imperative that the placenta be removed as soon as possible. At present the methods for the removal of the retained placenta in general use are Credé's manœuvre (at first without an anaesthetic and then with an anaesthetic), and, should this fail, manual removal. For some reason or other both yield better results in the hands of general practitioners than in those of the staffs of lying-in hospitals; nevertheless I feel that they are dangerous methods, especially that of manual removal.

During the past six years I have seen serious cases of shock, one case of complete inversion, one of ruptured uterus, and many of partial delivery with rupture of the placenta, all follow Credé's manœuvre and render it necessary for them to be sent to hospital. Manual removal of the placenta is one of the most fatal of surgical procedures, and one in every four cases in which it is used shows signs of uterine infection—according to the B.M.A. standard. Of eighty-four cases of manual removal recorded in Leeds between 1924 and 1930 thirty-eight were morbid and thirteen ended in death. The dangers of the

* Read to the Yorkshire Branch of the British Medical Association at its Annual Meeting in Scarborough, October, 1936.

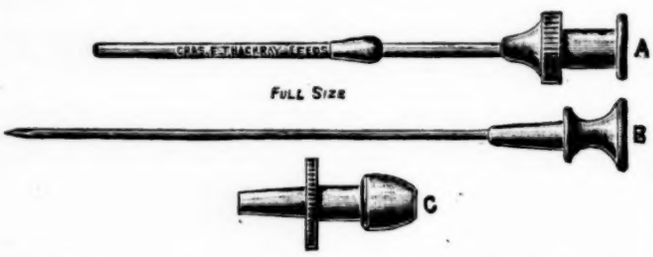
operation are many, and include sepsis, shock, haemorrhage, and rupture of the uterus.

It is the fear of these complications that has encouraged the staffs of hospitals to avoid manual removal if possible, and it is to this delay that the high mortality rate from this procedure is attributable. Of thirteen deaths recorded in Leeds eleven occurred at or within a few hours of the operation and only two subsequently from sepsis. These figures suggest that the operation was delayed until it became an urgent necessity and the patients were *in extremis*. The frequent manual removals carried out by general practitioners without death supervening may be explained by the suggestion that they are done mainly soon after the delivery of the child (possibly in cases which hardly merit such intervention) and that they too are successful in avoiding the introduction of sepsis. In spite of this, however, two or three patients are admitted to hospital each year after manual removal has been performed, and death follows from one of the complications already mentioned.

Treatment by Injection

It is this difficulty of not knowing when the placenta should be removed manually that has made the introduction of the method of injecting the umbilical vein so welcome. This method was used in 1826 by Mojon, who employed cold acidulated water and thought that his results were obtained on account of the low temperature. Jarcho in 1928 described two cases in which, after the injection of 250 c.cm. of saline into the umbilical vein, the placenta was expelled. He surmised that a retroplacental hydroma was formed which separated the placenta. It was this memorandum that suggested our starting work on the injection method, the technique of which may be outlined as follows.

The umbilical cord is cleansed with spirit, the trocar and cannula is inserted into the umbilical vein about eight inches from the vulva, and held in place with a cord ligature; 450 c.cm. of sterile saline at blood heat are then injected as rapidly as possible by means of a Higginson's syringe. The uterus rises in the abdomen, contractions occur, and the placenta is separated; in many cases it is expelled spontaneously. I injected a hundred freshly



delivered placentae with saline and found that they could accommodate 500 c.cm. of fluid before they begin to leak. This finding invalidates Jarcho's theory of the formation of a retroplacental hydroma. Doubtless the true explanation lies in the fact that on injection the placenta increases until it is nearly twice its original bulk, packs the uterus, stops the bleeding, and in most cases elicits contractions forcible enough to push the placenta into the vagina and to strip off the membranes from the wall of the uterus.

After the completion of the injection tests are made for the freedom of the placenta. If these tests show that the placenta is in the lower uterine segment or in the vaginal vault the fundus is massaged and the placenta is expressed. If, on the other hand, the tests show that the placenta is still in the upper part of the uterine cavity the patient must not be disturbed. The uterus has been packed by the distended placenta and bleeding ceases; further solution may be injected if bleeding recurs, and eventually, as the patient's condition improves, the uterus will regain its tone and the placenta can be expressed.

Advantages of the Method

The injection method has the advantage of simplicity in that it requires little surgical technique. Moreover, the umbilical vein is the largest vessel in the cord and the needle can be easily introduced. Water which has been recently boiled may be employed, and after the injection has been completed the cannula may be plugged by reinserting the trocar. It is advisable to insert the cannula into the vein as far away from the vulva as possible in order to preserve a long length of cord lest further injections be found necessary.

Surprise may be felt that such a convenient way of releasing the placenta fell into disuse. Its disrepute resulted from the use of non-sterile acidulated water, causing some patients to become septic; from the statement made by a well-known obstetric surgeon in Germany (Koerting, 1925), where the method was commonly employed, that it was of no value in cases of haemorrhage; and from the fact that unless the fluid is injected quickly no rapid change in the bulk of the uterine content is obtained and the resultant uterine contractions are weak. Consequently the use of glycerin as the injection fluid is not likely to yield good results, because such a viscid fluid cannot be injected quickly.

After the introduction of the injection treatment of retained placenta the need for manual removal immediately fell from twenty-five to one or two a year, and that method was used in cases where the cord was macerated or absent. In the Leeds records up to the end of the year 1935 the umbilical cord had been injected on 186 occasions, mainly for retained placenta, with or without post-partum haemorrhage; of these only two cases ended fatally and eight were reported morbid. One of the deaths occurred after admission in a moribund condition, and the other was that of a patient with advanced heart disease. The septic cases all followed instrumental delivery. In comparing these figures with those of manual removal we find that the death rate is 1.6 per cent. against 15.4 per cent., and the morbidity rate 8 per cent. against 45.2 per cent.

Additional uses to which the injection of the umbilical vein can be put include prophylaxis against post-partum haemorrhage (it is our custom to inject the vein if the patient has lost 600 c.cm. of blood without delivery of the placenta) as a precaution in cases of placenta praevia immediately after the delivery of the child, and as a means of clearing the field before suturing episiotomy wounds or tears accompanying a difficult instrumental delivery.

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R. Drenkhahn (*Med. Welt*, March 20, 1937, p. 394), on purely theoretical grounds, arrives at the conclusion that atropine in small doses causes a relaxation of the sphincter of the portio vaginalis of the uterus, while it has no effect, or possibly a slight stimulating effect, on the muscles of the body of the uterus. It should be useful in over-activity and tetanus of the uterus, but it is relatively useless in normal labour, in which the hypophyseal extracts are far more effective.

OCULAR HEADACHE

BY

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Headache, together with constipation, and independently of it, may be claimed to be the most widespread effect of civilization. Headache is a symptom of which the pathology is speculative. It is believed that branches from the fifth nerve convey sensations of intracranial pain, and on this basis headache may arise by direct stimulation of these dural branches, sometimes in a manner not yet fully understood, or by the mechanism of referred pain from a focus of irritation elsewhere in the extensive area of trigeminal distribution.

These considerations are of little interest to the sufferer, and even less to the pharmacist from whom he obtains tablets, powders, and pills. A patient only consults his doctor if the headache is persistent, recurrent, or disabling, and seldom does a case of headache alone find its way to hospital, especially to a teaching hospital. Such a case is not likely to be used as clinical material, the diagnosis of the cause being commonly reached by exclusion, after which there is no case to demonstrate.

The student learns of headache as a casual concomitant of other conditions. He comes as a stranger to a case of disease, not as family doctor to patient, and he is unable to give fair weight to a subjective complaint, of which the reality and severity cannot be assessed with even relative accuracy. In general medical practice subsequently he will find that a patient desires relief of his symptom, easily becoming impatient, and the less reasonable from the very nature of his trouble.

Value of Systematic Investigation

"To waste no time in examining a patient" means to the lay public a mixture of clairvoyance and genius, by which treatment is given and relief obtained without any examination whatever. It should signify a rapid systematic inquiry and investigation rather than one which is inadequate and undirected. To the patient an ounce of treatment is worth a ton of diagnosis, but even on this basis if there be no diagnosis the treatment has no permanent value. This is particularly true in the case of headache.

Does the headache in any given case arise from dysfunction or disease of brain, kidneys, or rectum; eyes, nose, or teeth? However limited may be the time at his disposal, the practitioner has only to determine which of these is the most likely, and to find without difficulty someone eager to relieve him of any tedious further investigation in the particular sphere, but the specialist in any branch prefers to give his services or to accept his fee for positive results rather than for negative findings.

Headaches of ocular origin often fail to be recognized as such by the patient—as commonly perhaps as unsuccessful attempts are made to obtain relief from hyperpietic or renal headaches by buying spectacles. Faced by commercial publicity a patient is slow to learn that unnecessary suffering and expense may be avoided by consulting his doctor.

The Dental Act has ensured that the teeth of Britain shall receive none but competent attention. The Minister of Health believes that the eyes of insured persons are safeguarded by examination before the insurance practitioner issues the essential certificate for ophthalmic benefit, and to secure that due heed is given to a request for full ophthalmic examination it is as well to cite the pathological condition found. Secretaries of approved societies are accustomed to regard certificates of incapacity as invalid if the cause is not stated, and it is possible (though not justifiable) that ophthalmic recommendations may be arbitrarily ignored if in the secretary's judgement they are incomplete.

It would be unreasonable to expect that with moderate equipment a general practitioner will make a comprehensive ophthalmic examination. He may be assisted to provide an adequate one by a summarized plan rather more comprehensive than that taught to the student in a crowded curriculum, a plan which will tend to exclude definite ocular causes of trouble.

In any case of chronic headache it is as necessary to examine the optic disks as the urine, blood pressure, or knee-jerks. With regular use of an electric ophthalmoscope the difficulties are rapidly overcome, even those presented by small pupils in the elderly where midriatics cannot safely be employed. The more normal disks one sees the more readily is an abnormality detected.

Measurement of Vision

It should be inquired whether each eye separately, with distance glasses if worn, can read 6/6 (that is, the seventh line of the usual Snellen test type from a distance of six metres, approximately twenty feet). Children under 10 years old may claim normal sight if at first trial they complete the sixth line, though letter knowledge varies with intellectual ability, and the mathematically or manually dexterous are often backward in spelling or reading. Sans-serif charts are usually more easily read, especially by children, who find the more complicated form of letters something outside their daily experience. Space is often limited in the consulting-room, but this is easily overcome by the use of types printed in the reverse, hung over the patient's head and read through a mirror on the opposite wall at a distance of ten feet. *It is not equivalent to employ smaller letters at a shorter distance.*

A visual acuity of 6/6 with either eye eliminates the possibility of uncorrected or under-corrected myopia. This is a matter of especial importance in juveniles and adolescents from the age of 10 to 25 years, but hardly concerns us here, as myopes as a class are not so liable to headache of ocular origin as are hypermetropes.

Hypermetropia and "Presbyopia"

A child or adolescent may be considerably hypermetropic, possibly unequally so in the two eyes, and yet read the distance test types accurately by exercise of his powers of focusing—powers which are considerable in infancy and which, it will be remembered, decline gradually throughout life until they become inadequate to focus close objects with comfort. The age at which this "presbyopia" is manifest depends upon how big a handicap of hypermetropia has to be made up by effort of accommodation, only the remaining surplus being really available. Any severe illness, accident, or operation, especially a gynaecological one, may leave accommodation permanently lessened if it occurs in the late thirties or after. Without actual measurement of any error of refraction or of limitation of accommodation it is fortunately possible to judge whether a discrepancy is present from the associated phenomenon of convergence. In focusing for near objects the normal individual instinctively converges his eyes to a proportionate degree, and if a handicap of hypermetropia already exists the individual must accommodate excessively and therefore converges excessively.

In a child, of course, this may lead to strabismus, transient and easily remediable at first, but if it be neglected even for a few weeks the child adapts himself to monocular vision and intractable amblyopia is liable to result.

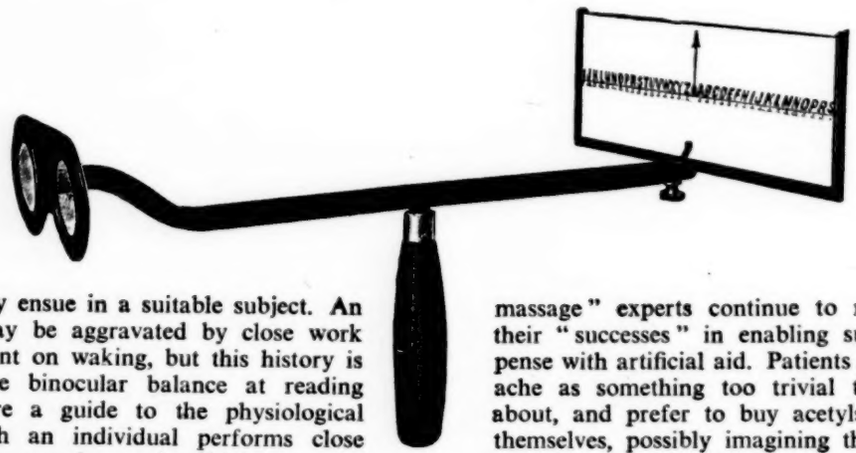
Latent Strabismus

The established habit of binocular vision in adults prevents this excess of convergence from becoming apparent as a frank squint, but the effort of maintaining a satisfactory balance imposes a strain reflected in several ways. Common among them is the inability of students, otherwise capable, to concentrate upon uninteresting textbooks, a tendency of the aged to fall asleep over their newspapers, while those who persevere in close work in spite of their difficulty are very liable to experience headache.

If, in the course of an operation for squint under efficient local anaesthesia, traction by a squint hook is exerted upon an internal rectus muscle, one is struck by the fact that the discomfort experienced by the patient is described as headache.

The Use of the Convergiometer

The headache due to latent squint at close range is commonly situated at the root of the nose or across the brow, and attacks of characteristic migraine or of migrainoid type may ensue in a suitable subject. An ocular headache may be aggravated by close work and is seldom present on waking, but this history is not invariable. The binocular balance at reading distance is therefore a guide to the physiological comfort with which an individual performs close work, and there are several ways in which it can be tested. A practicable one is by the use of the convergiometer. Its principles of construction were devised by the late Mr. Maddox many years ago, and they reflect his ingenuity in their simplicity. This very simplicity and the consequently inexpensive nature of the instrument may have prejudiced wider acceptance, for the wholesale manufacturers state that the demand has always been moderate. I am indebted to them (The Ellis Optical Company of Croydon) for the loan of the block.



A card bearing an arrow with a line of letters is seen through the eyepiece as two, one image being displaced upwards by a prism before the left eye and a second identical image being displaced downwards by a prism before the right eye. For the purpose of this test the patient wears reading glasses if he has them. A square of small newsprint pasted across the shaft of the arrow assists by concentrating the patient's accommodation on the card. If the lower arrow—that is, the one belonging to the right eye—points to the *left* of the upper arrow to some letter in the latter part of the alphabet all is reasonably well, for the internal recti have powers of convergence independently of those inseparable from accommodation and can make up for any lack in this respect. If, however, the lower arrow wavers even a little towards A on the right of the upper arrow—and certainly if it reaches this letter or beyond—the eye muscles are under a constant demand to exert a divergence (for which they have little capacity) up to and sometimes beyond the limit of comfort and almost of possibility, leading to headaches as the expression of such effort.

Correction by Eye-glasses

Great and perhaps undue stress has been laid upon small astigmatic errors as the cause of headache. The relief of headache by correction of such errors is often due to the restoration of normal muscle balance by adequate glasses. If a patient has bought for himself a pair of spectacles, estimated, fitted, and casually centred without correction of any muscle imbalance present, it is possible, should headaches persist, that he and his doctor will pursue their research for the cause elsewhere, and may part ultimately with expressions of mutual dissatisfaction. There is still some prejudice against the use of spectacles, and it has been suggested that numbers of people are wearing glasses unnecessarily as a result of commercial advertising campaigns. As long as all those not certifiably insane are assumed to be able, by exercise of their reason, to discriminate in such matters without expert guidance this possibility must exist, and the "eye massage" experts continue to reap the reward of their "successes" in enabling such patients to dispense with artificial aid. Patients often regard a headache as something too trivial to consult a doctor about, and prefer to buy acetylsalicylic acid tablets themselves, possibly imagining that their doctor can provide no better alternative.

Conclusion

The appreciation of pain and pleasure is very much a matter of temperament. Headaches are seldom incapacitating to those who may be described as "human vegetables," and when a phlegmatic, healthy individual complains diffidently of constant or frequent pains in the head investigation should be very thoroughly carried out. It must be a part of the treatment of the temperamental and neurotic patient to reduce to its true proportion each new symptom, whether of headache or any other kind; but to be effective this devaluation must follow such investigation as may be possible to exclude any real cause for such symptoms.

The use of test type and ophthalmoscope, and a rapid investigation of the lateral eye muscle balance at reading distance, will not reveal or exclude every ocular cause of headache, but they represent a simple, rapid, and sound method of ensuring as far as may be possible that appropriate ophthalmic attention is quickly given to those more obviously needing it, while others are referred for investigation to those quarters from which they are more likely to benefit.

LUMINAL AND PROMINAL IN EPILEPSY

A COMPARATIVE STUDY

BY

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The results recorded in this paper represent an attempt to compare the efficiency of luminal* with that of the more recently introduced barbiturate prominal* in the treatment of epilepsy.

In view of the satisfactory experience with the use of the latter drug reported by Heyde (1932) and other Continental workers, prominal was substituted for luminal in the routine treatment of epilepsy in this colony for mental defectives. The results in the aggregate were so striking as to warrant closer scrutiny and analysis. The comparison is therefore made in retrospect from a survey of routine clinical records, and not according to a predetermined method. The major and minor fits in all epileptic patients had been recorded on four-hourly charts.

Method of Substitution

The change from luminal to prominal, which was started throughout the colony on the same date, was made gradually by the method recommended by Blum (1932). Thus for the first four days one-third of the total luminal dosage was substituted by one and a half times that amount of prominal, for the second four days two-thirds were similarly substituted, and on the ninth day the whole luminal dose was replaced by a dose of prominal 50 per cent. greater. During and immediately after the change to prominal the majority of patients showed some increase in the number and severity of fits, but in no case did this assume alarming proportions. Subsequently dosage was adjusted to suit individual cases.

Choice of Cases

For the purpose of comparison only those cases known to have been under treatment with a suitably adjusted dose of luminal for some considerable time have been chosen. These cases had thus been observed for varying numbers of weeks immediately before the change to prominal. It should be pointed out that in every case the dose of luminal had been adjusted to a level low enough to avoid hypnotic effects. No case under any other form of treatment has been included.

Although no reference to the subject has been found in the literature, there appears to be some clinical evidence in support of the view that the incidence of epileptic fits and the mood of the patients bear some relation to atmospheric conditions. In order to minimize any error that might have arisen from seasonal variation those cases still available were observed for a similar period of weeks one year later, by which time the effect of prominal had long since become established.

From the records of eighty-two epileptic patients the number available as satisfying the above criteria is thirty-nine. The results in these cases are given in the following table.

Effect on Incidence of Fits

While there is considerable individual variation in results the mean weekly fit rate is reduced as follows: under luminal, 2.621 ; under prominal, 0.923. Hence the average weekly fit rate per patient on prominal treatment is 1.698 lower than, or roughly one-third of, the rate on luminal. The question now arises, Could such a difference be due to chance? The necessary statistical test was applied, and it was found that the odds are nearly 300 to 1 against such a result being a mere chance event. The reduction in the total number of fits since the

* The luminal and the prominal used in this study were obtained from Bayer Products Ltd.

TABLE I.—*Details of Fits Under Luminal and Prominal Treatment Compared (Observation Periods of Equal Duration)*

Case Number and Degree of M.D.	Age and Sex	No. of Weeks' Treatment	Luminal Fits				Prominal Fits				Effect on Behaviour of Change to Prominal
			Major	Minor	Total	Average Weekly Rate	Major	Minor	Total	Average Weekly Rate	
1 Id.	23 M.	40	70	7	77	1.93	1	1	2	0.06	+
2 Imb.	36 M.	31	5	5	10	0.32	0	0	0		
3 F.M.	27 M.	40	2	6	8	0.20	0	1	1	0.03	+
4 Imb.	27 F.	30	33	80	113	3.77	9	12	21	0.70	+
5 F.M.	29 F.	31	33	276	309	9.96	15	0	15	0.48	+
6 Imb.	19 M.	35	162	495	657	18.77	88	168	256	7.31	+
7 Imb.	29 M.	41	12	1	13	0.31	6	0	6	0.15	+
8 Imb.	34 F.	31	35	23	58	1.87	22	2	24	0.77	+
9 Imb.	36 F.	32	11	14	25	0.78	15	3	18	0.56	+
10 F.M.	31 M.	36	43	18	61	1.69	19	22	41	1.14	
11 Id.	16 F.	29	9	3	12	0.41	4	1	5	0.17	+
12 F.M.	33 M.	30	30	2	32	1.07	28	0	28	0.93	+
13 Imb.	30 M.	38	35	4	39	1.03	31	2	33	0.87	+
14 Id.	34 M.	13	8	0	8	0.62	0	0	0		
15 Imb.	57 M.	17	3	6	9	0.53	0	1	1	0.06	+
16 Id.	18 F.	11	3	1	4	0.36	0	0	0		
17 Imb.	36 F.	12	18	1	19	1.58	2	0	2	0.17	+
18 Imb.	19 M.	13	20	31	51	3.93	22	0	22	1.69	+
19 Imb.	25 M.	10	30	2	32	3.20	22	2	24	2.40	+
20 Imb.	39 M.	9	51	0	51	5.64	11	0	11	1.22	
21 Id.	34 F.	23	24	18	42	1.82	6	1	7	0.30	O
22 F.M.	27 M.	13	10	14	24	1.85	0	4	4	0.31	+
23 Imb.	26 F.	10	8	1	9	0.90	0	0	0		
24 Imb.	36 F.	12	64	1	65	5.42	9	0	9	0.75	
25 Imb.	27 M.	14	33	2	35	2.50	1	0	1	0.07	
26 Imb.	23 M.	9	2	14	16	1.78	2	2	4	0.44	O
27 Imb.	29 M.	11	28	3	31	2.82	12	0	12	1.09	+
28 Id.	16 M.	13	61	2	63	4.84	38	3	41	3.15	+
29 Id.	8 M.	21	28	23	51	2.43	2	6	8	0.39	
30 Imb.	12 F.	11	47	6	53	4.82	24	2	26	2.36	O
31 Id.	40 F.	10	25	0	25	2.50	4	4	8	0.80	O
32 Imb.	34 F.	10	17	2	19	1.90	2	0	2	0.20	
33 Id.	14 F.	25	5	4	9	0.36	1	4	5	0.20	
34 Id.	17 M.	12	29	4	33	2.75	20	1	21	1.74	+
35 Imb.	38 F.	10	4	3	7	0.70	0	0	0		O
36 Imb.	36 F.	10	7	0	7	0.70	3	0	3	0.30	O
37 Imb.	15 M.	16	61	6	67	4.20	17	5	22	1.37	O
38 Imb.	19 F.	18	8	16	24	1.33	20	13	33	1.83	
39 Imb.	46 F.	11	6	1	7	0.64	20	2	22	2.00	—

M.D. = Mental deficiency ; Id. = Idiot ; Imb. = Imbecile ; F.M. = Feeble minded.

In the last column : + = Improvement ; — = Retrogression ; O = Condition stationary ; a blank signifies no abnormal behaviour attributable to epilepsy.

change over to prominal is such that to see a patient in a fit in the colony grounds is now a rare occurrence, although a degree of freedom which is perhaps unusual is allowed to the majority of patients.

The individual variations in results are shown in Table II, which is based on the figures set out in Table I. This shows in ascending order of magnitude the number of major and minor fits which might be expected to occur in each patient under prominal treatment if, during an equal period of luminal treatment, he had experienced a hundred fits.

TABLE II.—*Calculated Number of "Prominal Fits," in each Case, per Hundred "Luminal Fits" (Average = 41)*

Case No.	No. of Fits	Case No.	No. of Fits
2	Nil	37	32.8
14	„	27	38.7
16	„	6	38.9
23	„	8	41.4
35	„	11	41.7
1	2.6	36	42.9
25	2.8	18	43.1
5	4.8	7	46.1
17	10.5	30	49.0
32	10.5	33	55.5
15	11.1	34	63.6
3	12.5	28	65.1
24	13.8	10	67.2
29	15.7	9	72.0
21	16.7	19	75.0
22	16.7	13	84.6
4	18.6	12	87.5
20	21.6	38	137.5
26	25.0	39	314.3
31	32.0		

Thus there is a considerable improvement in the majority of cases, while two cases show deterioration and a few show improvement of little or no significance. No common factor has been noted which would lead one to expect a particular type of response.

Effect on Behaviour

It will be seen from the last column of Table I that of twenty-seven cases showing examples of abnormal behaviour considered to be epileptic equivalents, nineteen were improved by prominal, one became worse, and seven showed no change. Again there is no obvious factor underlying a particular response.

Results in Typical Cases

As the effects of prominal on epileptics of relatively normal mentality will be of more general interest feeble-minded cases (rather than idiots or imbeciles) will be described in greater detail. Those nearest the middle and the extremes of the scale as shown in Table II are taken as typical of the varying forms of response.

Case 5.—This patient was a feeble-minded woman aged 29, in good physical condition. On luminal, 2 grains twice daily, her fits averaged nearly ten per week (approximately one out of every nine being major fits). She lacked initiative and was frequently troublesome; her epilepsy seriously interfered with her work and recreation. On prominal, 3 grains twice daily, she had an average of one fit a fortnight during the period under review. Since then the fit incidence has decreased and she has had no fit for eighteen months. She is now much brighter mentally, and is able to do useful work and to take part in Guiding and other colony activities.

Case 22.—This case was that of a feeble-minded man of 27, simple in manner, in good health apart from some chronic bronchitis. On 1 grain of luminal daily he was often excitable and quarrelsome, and needed much supervision when following his simple occupation. His fits, of which approximately two-fifths were major, averaged nearly two a week. During the corresponding period of prominal, 2 grains twice daily, he had no major fits, and the minor fits averaged one in about three weeks. His conduct was improved and his usefulness increased. Subsequent increase of dosage to 3 grains twice daily has not resulted in any further improvement.

Case 12.—This patient was a feeble-minded man of 33, in good health. He was simple and confused in manner; with a dose of luminal exceeding 1/2 grain daily his confusion increased and his capacity for employment was negligible. On this small dose of luminal his fits, mostly major, averaged about one a week and he became troublesome and resistive at times. He tolerates a prominal dosage of 3 grains three times a day. This produces little effect upon the incidence of fits, but his conduct is greatly improved and he is able and willing to work in the kitchen garden.

Dosage and Tolerance

Many adults in good physical health have received prominal, 3 grains three times a day, for over two years without ill effect. The dose for children has been estimated by the usual formula $\frac{\text{age}}{\text{age} + 12}$, which appears to be entirely satisfactory.

In a few adults of poor physique, particularly when they are constipated, some degree of drowsiness has been observed when the maximum dose of 9 grains daily has been given. In such cases appropriate measures are taken to deal with the constipation, and prominal is withheld for three days, after which the full dose is again established. In view of the well-known intolerance to barbiturates in cases of renal disease, the urine is examined in all cases showing drowsiness, in order to exclude the possibility of incipient uraemia.

While prominal appears to be the drug of choice for the majority of cases, luminal may be used in preference in those cases of low mental grade in which some hypnotic effect is not undesirable and in which the effect of prominal is disappointing.

Summary

A comparison of the efficacy of prominal and luminal in the treatment of epilepsy is made by examining the routine records of all epileptic patients in a colony for mental defectives; each case has been observed during similar periods on the respective drugs.

The principles by which cases were selected are described, and thirty-nine statistically admissible cases are recorded in tabular form.

The results are considered collectively and individually with reference to both incidence of fits and behaviour. The total number of fits under prominal treatment is shown to be approximately one-third of the number during a similar period under luminal therapy, and a beneficial effect on non-convulsive manifestations is found in a large proportion of cases.

Tolerance is discussed, and a dose of 3 grains of prominal three times a day is shown to be satisfactory over long periods in adults.

I am indebted to Dr. Noel H. M. Burke, medical superintendent, Cell Barnes Colony, for permission to publish the results of this investigation. My thanks are also due to Professor Major Greenwood and his staff for kindly looking over the results.

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PROMINAL IN THE TREATMENT OF EPILEPSY

BY

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The results of the treatment of epilepsy by prominal in mental hospitals recorded in the *British Medical Journal* by Dr. L. G. Millar Page (March 14, 1936, p. 531) and Dr. Leonard Barber (March 28, 1936, p. 666) were so encouraging that it was decided to try the effect of prominal on the mentally defective patients in this institution who had had the greatest number of fits during 1935. The fourteen patients chosen were having various forms of treatment by drugs and diet, etc. Some had had luminal without any marked improvement, but were not receiving it at the time the use of prominal was begun. On April 1, 1936, every other kind of treatment was stopped, and in only one case has anything except prominal been given since then. One of the fourteen cases was discharged to another institution after six months, so that the figures below relate to thirteen only. All the thirteen patients had been having epileptic fits regularly for from three to twenty years, and the number of fits recorded in the preceding twelve months was rather more than in previous years.

The reduction in the number of fits in the first three weeks of treatment with prominal (twenty-eight against 124 in the corresponding period in 1935) was so remarkable that it was decided to keep exact records of these cases for the next twelve months. This has been most carefully done by Mr. D. D. Steadman, surgery attendant.

Case No.	Number of Fits: April 1 to March 31		Decrease in Number of Fits
	(Bromide, etc.) 1935–6	(Prominal) 1936–7	
1	581	107	474
2	327	137	190
3	191	55	136
4	150	112	38
5	122	2	120
6	93	93	—
7	69	67	2
8	72	11	61
9	62	7	55
10	109	45	64
11	51	13	38
12	263	42	221
13	38	5	33
Total	2,128	696	1,432

It will be seen that there was a reduction of just over two-thirds (67.3 per cent.) in the number of fits in twelve months.

To begin with, each patient was given 9 grains of prominal a day—that is, one tablet three times a day—but in nearly every instance this was found to be too much and had to be reduced—in some cases on April 2 and in the rest on April 4. The main symptom of overdosage was drowsiness, and the dose was reduced to 6 grains daily. In Cases 2, 4, 6, 7, and 10 the daily dose was further reduced to 3 grains, but after a few days was restored to 6 grains.

Case No. 1.—For several years this patient was quite useless and under constant observation owing to the frequency and severity of fits. Is now doing housework, and fits are less severe as well as less frequent.

Case No. 9.—Fits reduced from sixty-two to seven. Much brighter mentally.

Case No. 12.—Had been bedridden for six months owing to severity of fits. Is now up and back at school.

Case No. 8.—Has been at work regularly lately (shoemaker).

Cases 2, 3, and 4.—Not much improved mentally.

Cases 5 and 13.—Low-grade imbeciles, but much more lively and cheerful.

Case No. 10.—Physically improved. This patient has had an average of 118 fits a year for the last twenty years. (In 1900 he had craniectomy operation for epilepsy, without any improvement.)

Case No. 11.—Little change. This patient is 67 years old.

Case No. 6.—Has not benefited; 9 grains daily reduces the number of fits, but produces drowsiness to such an extent that he is unable to walk; 6 grains daily has no more effect on the number of fits or their severity than bromides.

Case No. 7.—This is the only patient who has had any other treatment besides prominal. Up to the week ending November 14 he had had nearly 50 per cent. less fits than the previous year. During the week ending November 21 he had forty fits in three days, and was given bromide and chloral hydrate by mouth and by rectum in addition to prominal. Since then he has had only nine fits, against twenty-nine in the corresponding period of 1935. He takes 3 grains of prominal daily.

During the time these patients have been undergoing this treatment there has been no alimentary disturbance. Nothing abnormal has been found in the urine, nor has the blood pressure been found to vary to any great extent. So far there has been no indication that the drug is losing its efficacy. The treatment is being continued, and other cases of epilepsy are receiving prominal. All those treated were suffering from *grand mal* only. Prominal has not been found to have any effect on the few cases of *petit mal* on which it has been tried.

J. J. C. P. A. Roovers (*Nederl. Tijdschr. Geneesk.*, May 22, 1937, p. 2346) records the case of a girl, aged 5 years, who suffered from generalized calcinosis. The Wassermann, Müller, and Kahn reactions in the blood were negative. She was given 3 grammes of sodium citrate a day by mouth and calcium intravenously. In three weeks after the treatment was begun the calcium content of the blood rose from 11.5 mg. to 20 mg. per 100 c.cm. of blood, and the phosphorus content from 4.7 mg. to 10.8 mg. per 100 c.cm. Slow but steady improvement followed. The calcium nodules subsided, the contractures disappeared, as did also the limitation of movements in the joints, and practically complete recovery took place.

Clinical Memoranda

Lymphosarcoma with Perforation of Gastric and Intestinal New Growth

It must be exceptional for a case of lymphosarcoma to present perforation of both gastric and intestinal new growth. I do not know of a recorded case. Ewing (1928), in a detailed account of lymphosarcoma, mentioned the possibility of intestinal perforation, and cases of the latter have been reported, though infrequently—for example, by Whitaker and Fisher (1934). Gastric perforation in lymphosarcoma would seem to be even rarer, for no record has been found in the literature consulted.* The following case, presenting both complications, is therefore of interest.

CASE RECORD

A. B., a male 34 years old, was admitted to St. Stephen's Hospital (L.C.C.) on November 13, 1936, presenting bilateral glandular enlargements in the following regions: submental, pre-auricular, lateral cervical, supraclavicular, inguinal, femoral, and axillary. The patient had first noticed swellings in the groins two years previously, and he said that the other swellings had been present for two months. Examination showed that, in addition, the right posterior part of the tongue was thickened, ulcerated, and fixed to the adjacent faucial tissue. There was gross oedema of the left leg, the lumbar region, and the penis, and dilated veins coursed over the right upper chest wall anteriorly. The liver was moderately enlarged, but the spleen was not palpable. The face was pale, the expression strained, and the cervical swellings gave a square outline to the face. The pulse rate was 116 per minute and the temperature normal. Examination was negative in other respects, as were also ophthalmoscopic and urinary examinations and the Wassermann reaction.

Two days after admission he complained of the onset of acute lower abdominal pain and nausea. The temperature was 99° F., the pulse rate 120 per minute. There was neither abdominal tenderness nor rigidity. The next day (November 16) he was markedly breathless; the abdomen was tense and ascites was present, but the abdominal pain had subsided. He died on November 18, five days after admission.

At necropsy the identity of the glandular masses enumerated above was confirmed. The right posterior part of the tongue was infiltrated with hard new growth and attached to the fauces. There was a large mass of intensely white glands in the mid-mediastinal region, matted together, and less extensive enlargement of the glands about the aorta; here the glands were black. The abdomen contained several pints of yellow turbid fluid. The liver showed perihepatitis and fatty degeneration. The spleen was moderately enlarged and unduly soft. There was malignant ulceration of the lower part of the posterior wall of the stomach, which had perforated. Further, there was extensive lymphosarcomatous involvement of the ileum, with perforation of an area of malignant ulceration which was close to a Meckel's diverticulum.

PATHOLOGICAL REPORT

The following report was made by Dr. G. W. Goodhart:

Stomach.—The tumour consists of rather large mononuclear cells with a fine fibrillar stroma. It has completely replaced the mucous membrane over a large area, and is here largely necrotic. In places there is a dense fibrous tissue reaction with atheroma of the arteries.

Intestine.—The main mass of the growth is in the submucosa, with extensive ulceration of the mucous membrane; the whole area is infiltrated, and in the neighbourhood of the perforation the muscular wall is entirely replaced by growth, with a thick layer of fibrinous exudate on the peritoneal surface. The lymphosarcoma cells are of the same type as those seen in the stomach.

Mediastinal Glands.—The normal structure of the gland is destroyed, and is replaced by large mononuclear cells in a meshwork of fine fibrin.

Spleen.—The histological picture is one of general infiltration by lymphosarcoma cells.

Liver.—No growth seen; severe fatty degeneration.

It is a pleasure to thank Dr. G. W. Goodhart, pathologist of the Group Laboratory, St. Mary Abbots L.C.C. Hospital, for his report and his interest; also Dr. D. S. Sandiland, medical superintendent of St. Stephen's L.C.C. Hospital, and Sir Frederick Menzies, medical officer of health of the London County Council, for permission to publish this case.

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* Since this article was written a case of gastric perforation in lymphosarcoma has been described by S. Keys and W. W. Walther (*Lancet*, 1937, **1**, 1169.).

Carcinoma of Rectum in a Girl of Twenty

The case described by Mr. R. Rutherford on page 860 of the issue of the *Journal* for April 24, 1937, invites comparison.

In 1931 an unmarried girl of 20 began to feel pain on defaecation and passed blood and mucus in the stools. This continued until April, 1933, when she sought advice and was sent to hospital by her doctor.

The patient was pale, thin, and weak. Rectal examination revealed an ulcerated friable growth involving three-quarters of the circumference of the ampulla and about four inches in length, extending downwards to within 1½ inches of the anus. Rectal mobility could not be elicited. Microscopically the growth was seen to be an adenocarcinoma, the tumour cells being of columnar type with little tendency to anaplasia. Long radium needles (0.8 mm. Pt) were inserted per rectum in a cylindrical distribution in the plane of the tumour bed, and three months later a small area of residual growth was re-irradiated, using a few underscreened radon seeds (0.3 mm. Pt).

After an interval of three months digital and sigmoidoscopic examination under anaesthesia was carried out. An elastic transverse ridge causing a minor degree of stenosis was palpable through smooth intact mucosa. There was no ulceration or sign of residual growth. Since then, for four years, the patient has been examined at regular intervals and the local condition remains unchanged. She is well and has grown fat, and the bowels open without difficulty per rectum. Colostomy has never been performed.

The interesting points are: (1) The age of the patient. (2) The success of radiation treatment in spite of the unpromising site, extent, and histological character of the growth. (3) The absence of either colostomy or rectal disability in spite of originally extensive malignant disease.

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Parkinsonism following Peripheral Trauma

Apart from its appearance following encephalitis, Parkinsonism may appear as a sequel to manganese poisoning, senility, syphilis, arteriosclerosis, and various forms of trauma. Numerous records and review collections of cases of Parkinsonism following cranial trauma have recently been published. Among the best are those of Patrick and Levy (1922), Grimberg (1934), Kulkov (1932), and Bruetsch and DeArmond (1935).

Records of Parkinsonism following peripheral trauma are more scanty. Faure-Beaulieu (1932) gives a minute account of such a case in which the injury was to the arm. The details of clinical observation and commentary in this case are very convincing. Naville and de Morsier (1932) review with lengthy commentary forty-two published cases of Parkinsonism following peripheral trauma. They point out that such cases present the following characteristics: (1) In the interval between the injury and the full development of the Parkinsonian syndrome the injured limb remains weak, painful, and subject to sensory disturbances. (2) Tremors and hypertonus almost always appear in the injured limb. (3) The syndrome becomes manifest on the injured side. (4) Mental changes are absent.

In their commentary Naville and de Morsier (1932) quote Charcot as favouring the possibility of Parkinsonism from peripheral trauma, and they suggest that the peripheral injury brings about the cerebral illness by means of a subacute toxic ascending neuritis.

CASE HISTORY

In September, 1934, "B." had on his records no note of any illness of relevance or gravity. On that date his right hand was accidentally crushed, lacerated, and bruised. It became inflamed and lengthy local treatment was required. Although the wounds have long since healed the pain in the hand has persisted.

I first saw "B." in April, 1935, at the request of his union. I advised the union about the obvious results of lack of gripping power, etc., in the damaged hand, and made a private note, without any idea of what was to come, that the man appeared more timid and nervous than might have been expected. I also noted that he talked in a rapid monotone, but was misled when he assured me that this was due to loose teeth.

I next saw him in March, 1937. He told me that the pain in the right arm was still present. He said that the arm had begun to tremble about a year after the accident. He also stated that the right leg had also become tremulous about eighteen months after the accident. He now presented the typical Parkinsonian syndrome, with unilateral tremors, blank expression, forward gait and posture, and dry flat monotone.

As a result of my representations a satisfactory settlement in regard to compensation has been secured.

Sunderland. G. F. WALKER, M.D., M.R.C.P.

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Reviews

DIAGNOSIS AND TREATMENT OF DIGESTIVE DISORDERS

The Diagnosis and Treatment of Diseases of the Stomach and Intestines. By William Fitch Cheney, B.L., M.D. (Pp. 378. 24s. net.) London: H. Milford, Oxford University Press. 1937.

The Diagnosis and Treatment of Diseases of the Liver and Biliary Tract. By John Phillips, M.B. Revised by Russell L. Haden, M.D. (Pp. 539; 58 figures. 32s. 6d. net.) London: H. Milford, Oxford University Press 1937.

In a volume of less than four hundred openly printed pages Professor W. F. Cheney has brought together the essentials of diseases of the stomach and intestines. After a short survey of the methods of examination, with a commendatory note on gastroscopy, the author proceeds to deal with the disease syndromes severally. It is noteworthy that he regards the state of chronic gastritis as established beyond question by modern *x*-ray and gastroscopic technique, a position which is not yet acknowledged generally by workers in the United States, though accepted here and in Europe for many years. After describing the general course of cases of gastric ulcer and its treatment, the author gives a separate and useful chapter on its complications, haemorrhage, perforation, pyloric obstruction, and hour-glass stomach. The chapter on cancer of the stomach is full and sound. In discussing the question of cancer originating on an ulcer base, Professor Cheney, while pointing out that the clinical history is often suggestive, finds that often with complete *x*-ray and chemical examination a certain diagnosis cannot be made. In these circumstances, he says, the only rational procedure in the dilemma is, if doubt exists, to treat the patient for ulcer and then judge by clinical progress and by repetition of the *x*-ray examination. But ulcers even already malignant may improve temporarily under treatment by diet and medication, and valuable time may be lost before proceeding to surgical measures. The author divides disturbances of the functions of the stomach into three groups: those due to organic disease of the stomach itself, those due to organic disease elsewhere in the body —for instance, in appendix and gall-bladder—and those due to faulty innervation without organic disease discoverable anywhere. It is noticeable that in the last generation this last group, the gastric neuroses, has dwindled into an insignificant section of most modern textbooks. The author is thoroughly up to date in this and in his recommendations for treatment. He reserves judgement about the efficacy of mucin treatment for gastric ulcer, and is unimpressed by the claims made for injections of histidine, which has been extensively advertised to the medical profession under the trade name of larostidin. Each diseased state is illustrated by type case-histories from the author's practice and the records of Stanford Medical School, and the book as a whole bears the imprint of his individual thought and opinion. The section on the diseases of the intestines follows similar lines. The methods of examination are discussed, then inflammation of the intestines and chronic ulcerative colitis under the headings amoebic, bacillary, tuberculous and non-specific. This last-named group appears to be less common than in this country. So, too, the modern author would combine the two chapters on ulcers of stomach and of duodenum into one discussion of peptic ulcer, since clinically they resemble each

other so closely that it is hard to distinguish one from the other by history and effects upon digestive functions. Professor Cheney makes the anatomical but arbitrary separation of the two by the pylorus, and this involves some repetition and redundancy. It affords an opportunity, however, of bringing in and describing diverticulum of the duodenum. A new form of inflammation of the small intestine was differentiated by Crohn in 1932, and is given a clearly written notice. This excellent volume may be recommended as sound and up to date.

Another volume of the same series is devoted to diseases of the liver and biliary tract. The author, Dr. John Phillips, after completing the manuscript, lost his life as a result of the disastrous fire in the Cleveland Clinic in 1929, and the book has been revised and passed through the press by Dr. Russell L. Haden. It contains a good account of the clinical aspects of the subject, preceded by short chapters on the anatomy and physiology of the liver and special methods of testing liver function. About 15 to 20 per cent. of cases of jaundice are non-obstructive, and the author follows modern teaching in regarding it as established that in catarrhal jaundice there is an acute inflammatory or degenerative hepatitis. He treats the various toxic forms of jaundice, from drugs and in Weil's disease, under the heading of jaundice, reserving an independent chapter for the cirrhoses. It is perhaps simpler pathologically to treat the whole series as a range of interactions of toxin and liver cells, but it may be more useful clinically to deal with the syndromes separately. Practitioners will obtain from the book all that it is necessary to know and each chapter is followed by a short bibliography. The illustrations are noteworthy, many in colour.

AN ACCOUNT OF BACTERIA

Fundamentals of Bacteriology. By Martin Frobisher, jun., B.S., D.Sc. (Pp. 474; 230 figures. 14s. net.) Philadelphia and London: W. B. Saunders Co. 1937.

Bacteriology has developed as an applied science. The relationship of bacteria to disease has in the past been the main preoccupation of bacteriologists, though the part played by these micro-organisms in agriculture and industry has also received attention. The result of this has been that few have had either the opportunity or the incentive to study bacteria for themselves as a purely academic pursuit. To-day, to some extent at any rate, there is a reaction against this one-sided approach to the subject, and the number of those who are interested in the science of bacteriology, quite apart from its important applications, is increasing. As evidence of this, textbooks are appearing in which bacteriology is treated in a broad and unspecialized manner, an example in point being the recently published *Fundamentals of Bacteriology*, by Dr. Martin Frobisher, jun., of the Johns Hopkins University. In this book of between 400 and 500 pages the author has attempted to give us a picture of bacteria as minute unicellular plants with many interesting and important activities—medical, industrial, agricultural—and so provide the student with that broad base on which the more specialized knowledge of one of the applied branches of bacteriology can, if necessary, be built. It is interesting to note that despite the author's avowed object there is a chapter devoted to pathogenic protozoa. Although it is usual to include protozoa in textbooks of bacteriology written for medical students, a practice which though regrettable is understandable, there can be no excuse for doing this in such a book as Dr. Frobisher has written, and it is to be hoped that in future editions he will leave this chapter out.

Generally speaking it can be said that the author has achieved his object. In the small compass of this book he has given us a readable, interesting, and accurate account of bacteria. It is divided into three sections. The first of these is devoted to general principles, the general properties of bacteria, the technique of their study, their morphology, physiology, and their identification. Section II is mainly systematic, opening with a chapter on classification, followed by accounts of the different genera. This section contains also interesting accounts of the bacterial flora of the soil and their role in soil fertility, and a chapter devoted to the industrial aspects of bacteriology. The third and longest section is concerned with the part played by bacteria in disease, and this is extended to include the rickettsia and the viruses. In the present state of our knowledge of the nature of these last two groups of disease agents it is perhaps permissible to include them in a book of this nature, and both these chapters are quite good, though it is rather difficult to follow the author's train of thought when he attempts to draw a parallel between the activities of the viruses of yellow fever and psittacosis.

The book closes with a chapter outlining the birth of the science of bacteriology. The usual practice is to introduce the subject by a historical survey, and that certainly seems the more logical procedure.

ANTIMONY IN MEDICINE

Ergebnisse und Fortschritte der Antimontherapie. By Professor Hans Schmidt and Dr. F. M. Peter. (Pp. 218; 8 figures. RM. 15.50; geb., RM. 17.) Leipzig: G. Thieme. 1937.

This book on the results and progress of antimony therapy contains a full review of an important subject. No other drug used in medicine has had such a chequered career as antimony. Introduced into medical practice by Paracelsus, it had, like its sponsor, a stormy and turbulent career, for its employment was bitterly assailed by the adherents to Galen, and the authorities of the University of Paris in 1560 forbade their graduates to use it, a veto which was maintained for 100 years. During the next two centuries antimony became the sheet anchor of the heroic school of therapy, but with the decline of this school the drug fell into disrepute, and by the opening of the present century its therapeutic use had almost ceased. It made, however, a remarkable recovery of a wholly unexpected nature when, in 1907, antimony tartrate was discovered to be a potent trypanocide. The importance of this was at first obscured by the development of the organic arsenicals, but later intensive research produced a series of organic antimonials, and to-day these rival, if they do not surpass, the organic arsenicals in respect of therapeutic importance. The most important uses of these organic antimonials are in the treatment of bilharzia, trypanosomiasis, and kala-azar.

Many hundreds of organic antimonials have been prepared; certain of these are of outstanding and well-established importance, such, for instance, as the trivalent compound fuadin or antimosan and the pentavalent compounds stibosan and neostibosan. The authors give a comprehensive survey of the literature relating to the use of antimony compounds in tropical diseases. It is interesting to note that the various compounds mentioned have highly selective and specific actions. The trivalent fuadin has proved superior to the pentavalent compounds in the treatment of bilharzia, but on the other hand neostibosan is more effective than fuadin in the treatment of kala-azar. Fuadin is an effective trypanocide as regards *T. brucei* and *T. congolense*, but is inactive against *T. equiperdum*.

The authors describe also three new arseno-antimonial compounds prepared in the Elberfeld laboratories of the I. G. Farbenindustrie which appear to be effective against a wide range of micro-organisms. One of these (Sdt.386B) has shown an activity in relation to bartonella infections which exceeds that of any known compound of arsenic or antimony.

A HANDBOOK OF OTO-RHINO-LARYNGOLOGY

Diseases of the Nose, Throat, and Ear. A Handbook for Students and Practitioners. By I. Simson Hall, M.B., Ch.B., F.R.C.P.Ed., F.R.C.S.Ed. (Pp. 423; 55 figures. 10s. 6d. net, post 6d.) Edinburgh: E. and S. Livingstone. 1937.

Dr. Simson Hall has written a book on diseases of the nose, throat, and ear of moderate size, intended for the use of the medical student and the general practitioner. For this limited purpose it is no doubt well suited, as some instruction will be found upon most points coming under these headings, and the author has brought his work up to date in essentials, including endoscopy. Owing to the size of the book the information given is in many important places superficial in character. Greater care in writing and the choice of illustrations would have provided space for additional detail, but so far as they go the descriptions are accurate. It is necessary, however, to comment on the statement that the ideal anaesthetic for oesophagoscopy is intratracheal insufflation of ether. When the inevitable explosion occurs this book may be quoted in defence of this practice, and the author would then find himself in a situation of no slight embarrassment.

Dr. Simson Hall has no doubt fully realized that he is competing with a number of other manuals designed on a similar scale, but he has evidently taken much trouble in preparing the book so as to present the subject in a practical way which will appeal to a large class of readers. It is not difficult to find omissions, but they are not of major importance.

SKIN TEMPERATURE IN HEALTH AND DISEASE

Hauttemperaturen. By Johannes Ipsen. (Pp. 375. 18 Cr.) Copenhagen: Levin and Munksgaard. Leipzig: G. Thieme. 1936.

It is only in quite recent years that the variations of skin temperature in health and disease have been seriously studied. In this work Dr. Johannes Ipsen of the State Hospital at Sonderborg in Denmark has been a pioneer in defining the various abnormalities of skin temperature met with in surgical cases. He has used for his measurements mercurial thermometers, and especially the thermo-electric apparatus of Hartmann and Braun. In the present book, which is embellished with many charts and diagrams, he now describes in full detail this rather unfamiliar field of knowledge. He passes briefly over the normal variations that are connected with the conservation of body heat and those that depend on the reactions to external heat and cold. Incidentally he makes very clear the wide differences in normal skin temperature in different parts of the body, and the great importance clinically of comparing the readings taken from corresponding parts on either side.

It is well known that the skin temperature at any point depends on the activity of the cutaneous circulation and that the flushed and heated skin in fever favours the loss of body heat, and that, on the other hand, when temperatures are subnormal the bloodless and pallid skin is favourable to the conservation of heat. But the parts played by the arterioles and capillaries are perhaps less realized. By the aid of an ingenious diagram of skin heat and colour Ipsen shows that increased warmth of the skin indicates dilatation of the arterioles, while the colour ranges from red to white according to the calibre of the capillaries. In injuries, operations (even abdominal), arteritis, aneurysm, phlebitis, etc., he attaches much importance to lowered temperature in the leg or foot, which may even indicate serious circulatory disturbance in advance of other signs. A few minutes after an embolism the foot temperature may fall as much as 9° C. Post-traumatic arterial spasm may depress the temperature 10° or 12°, the injured part (and this is important) losing its normal reaction to cold. Another interesting diagram shows the range of difference between superficial and deep temperatures in Graves's disease and in fever as compared with the normal.

Sufficient has been said to indicate the far-reaching value of Dr. Ipsen's work. The importance of skin temperature in diagnosis alone is too often overlooked. We can remember acute pains thought to be rheumatic and proved to be due to commencing phlebitis by a patch of raised temperature in the leg; and, again, cold areas on the upper arms or thorax, which were signs of more deep-seated circulatory disturbance. Although this book deals mainly with surgical conditions, it should be of wider interest at the present time, when clinicians are realizing the importance of local and general chill, both from the diagnostic and the therapeutic standpoints. Where these areas of cold are present it is often possible not only to restore the local circulation but to relieve more deep-seated disorders.

Notes on Books

The Condition of Britain (Gollancz, 7s. 6d.) is a survey of modern life in this country by those indefatigable writers, G. D. H. and M. I. COLE, who systematically cover the whole field, reinforcing the text with a lavish use of tables, statistics, and diagrams. The book deals with distribution of income and property, housing, unemployment, standard of living, education, taxation, and social services, in addition to many other subjects. Of special interest to medical readers is the long chapter devoted to health and nutrition. Here the authors conclude, not without some justification, that the existing situation is grossly unsatisfactory in certain respects. They refer in particular to maternal mortality and to the undernourishment which prevails among a third of the population. As sanguine as they are industrious, Mr. and Mrs. Cole have constructive ideas for the remedy of these and the many other evils that beset us. "If we want social betterment we must create, both here at home and as far as in us lies in the world as a whole, the psychological conditions which will make betterment possible." This is a valuable and informative book, and the reader, whatever his political opinions, cannot but be impressed by the ability and sincerity of the authors.

In *Pediatric Dietetics* (H. Kimpton, 32s.) Dr. N. THOMAS SAXL sets out to assemble and correlate available data on the subject of the dietetic treatment of the sick child in one volume. The result is a large accumulation of facts, often contributed by experts, which would be better appreciated if there had been more rigid pruning. Illustrations of sick children seem curiously out of place, and the brief descriptions of certain disease processes are quite inadequate. These drawbacks are to be regretted, for as a standard work of reference this volume contains much that is valuable, particularly the sections giving composition of food in regard to minerals and other essential constituents. Indeed, the appendix containing such tables and many recipes is the best part of the book.

Dr. H. B. SHAFER writes an account of *The American Medical Profession 1783–1850*, which appears as No. 417 of Studies in History, Economics, and Public Law from the Faculty of Political Science of the Columbia University (London, P. S. King and Son, 14s. 7d.). Dr. Shafer deals first with American medicine at the close of the eighteenth century, when such influence as it had came from the medical teaching at Edinburgh with a small trickle from the Hunterian school in London. He then tells of medical education in the United States, and deals with the special problems resulting from deficient preliminary teaching of the students, medical centres separated from each other by great distances, and the want of central control. He mentions incidentally that in some schools candidates paid the professor an examination fee which was kept if he passed but returned if he failed. There is an interesting chapter on medical ethics and fees, from which it appears that the dollar was practically equivalent to the guinea charged in these islands. The United States has always been recognized as the home of journalism, and Dr. Shafer states that between 1795 and 1850 no fewer than 117 medical periodicals were published. The book is valuable but is not exhaustive; there is still room for a companion volume on the private medical schools, because Dr. Shafer deals principally with what in England would be called the faculties of medicine and surgery. His accounts of cupping, of the practice of medicine, and of surgical operations stand in need of revision by a skilled hand, for the author is a doctor of philosophy, not of medicine.

Dr. LOUIS CHAPELON'S *Le Rôle de la Lumière dans l'Accommodation* (Paris, Vigot Frères, 25 fr.) is a teleogical exposition on the significance of light as a factor influencing the mechanics of vision. He holds that quite apart from its action in exciting visual sensation, light is responsible for the process of accommodation, adapted for all distances up to infinity. From a review of comparative anatomy, embryology, and physiological optics he argues that in the course of evolution the intrinsic muscle fibres of the eye have become sensitive to light and respond by secretion of aqueous, and so directly affect the shape of the lens. He finds the plan admirable as a balance between the intrinsic and extrinsic forces operating on the muscle system of the body, allowing the maximum adaptation of the individual to the outer world.

The annual report for 1935–6 of the Swiss Research Institute for Tuberculosis and Alpine Climatic Conditions describes the continued progress of several researches. At the physico-meteorological observatory the reactions of the human body to varied weather conditions are being investigated. Researches in the pathologico-anatomical and bacteriological section include a study of the chemical constitution of the tubercle bacillus.

Preparations and Appliances

AN IMPROVED HEADLIGHT

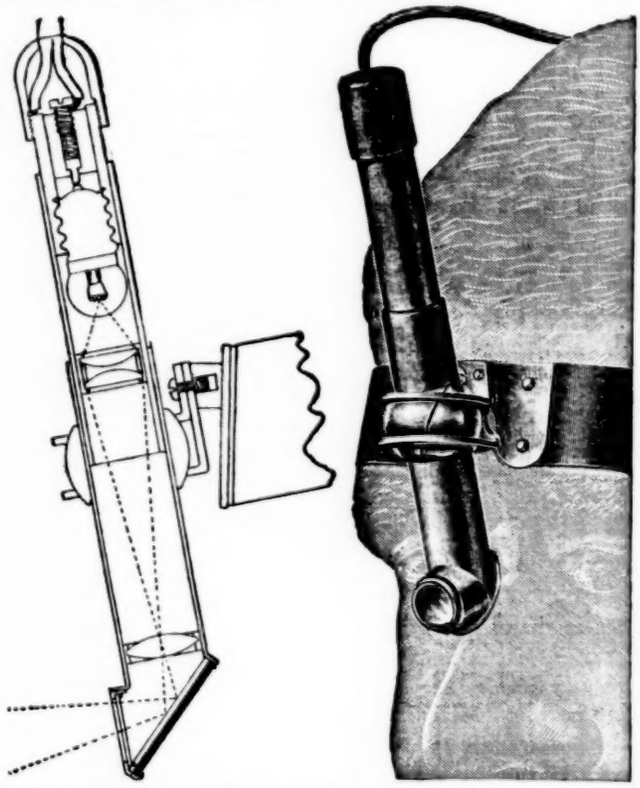
Mr. G. W. MOREY, M.B., D.L.O., writes from Shrewsbury:

There are many headlamps on the market, but none are really satisfactory. For the past four years I have been attempting to design a better lamp than those usually obtainable, and though the design I now publish is, I hope, a marked improvement on former headlamps, it is realized that it, too, still leaves a good deal to be desired. Primarily this lamp has been designed to overcome the disadvantage of a tube projection between the eyes, which encroaches on binocular vision.

For any headlamp to be really satisfactory the following conditions should be fulfilled: (1) the light itself should be of high intensity, (2) there should be a clear focused circle of homogeneous light, (3) the diameter of the light circle should be controllable by some system of focusing, (4) the light axis should be as close to the visual axes as possible and parallel with them, (5) no part of the instrument should protrude into the line of vision, (6) it should be light in weight.

The headlamp which is depicted here fulfils these conditions. From a dry battery worn on a belt, current is supplied to a 4-volt or an 8-volt bulb. This bulb is of special design, having a closely wound spiral filament, placed close to the glass. By overloading up to about 30 per cent. these bulbs will give a very intense light without fusing, though after some twenty hours' use they may gradually turn black and require replacing.

The optical system through which the light passes has been very carefully worked out to give the maximum intensity. A condenser is fixed in a movable tune to allow focusing, while distal to the projection lens is a small mirror, set at 45° in order to turn the light beam through a right angle. This mirror is enclosed behind a plane-glass window so that it and also the projection lens do not get soiled.



The headband is cut on a curve and so fits comfortably on the head. The lamp is held vertically in a gimbal ring and can be moved in any direction. The mirror fits snugly against the bridge of the nose and is almost invisible, and in this position allows the light beam to coincide with the visual axes as nearly as is possible. The whole instrument is so light in weight that it can be worn for many hours without discomfort.

I am indebted to Messrs. Rayner and Co., 100, New Bond Street, London, W.1, who have helped me with my experiments and who have made this instrument.

NEW STETHOSCOPES

The Capac Company Ltd. (6, Old Jewry, E.C.2) have devised two new patterns of stethoscope representing the outcome of prolonged research in acoustics as applied to instruments. The chest pieces are of solid construction, supplied either nickel-plated or in aluminium. For each chest-piece there are interchangeable chest-ends so that concave or convex forms may be used. The model with dome and secondary annular diaphragm, when fitted with the convex end, renders heart and lung sounds very clearly. The head-frames are fitted with comfortable rubber plugs for the ears, while in one model a spiral spring between the arms maintains suitable compression. Detachable plug fittings unite the head-frame with the rubber tubes, allowing easy detachment if desired. These instruments are found in use to be both efficient and comfortable; the latter is a factor too frequently overlooked by the makers of stethoscopes.

GASTRIC DISORDER AMONG BUSMEN

A STATISTICAL INQUIRY

A report by Dr. A. Bradford Hill on "An investigation into the sickness experience of London transport workers, with special reference to digestive disturbances," was issued on July 7 by the Medical Research Council and the Industrial Health Research Board.[1] The Industrial Health Research Board has investigated health problems of importance to industry by the use of sickness statistics on three previous occasions. In 1927 an attempt was made, by utilizing the incidence of sickness recorded under the National Health Insurance Acts, to discover whether artificial humidity introduced into cotton-weaving sheds had any measurable effect on the health of operatives. Sickness statistics were also applied in investigations into the death rates of printers from tuberculosis and into the liability to respiratory affections of operatives working in the preliminary cleaning processes of cotton-spinning mills. On each occasion the Board has set up a special committee composed of equal numbers of employers and employed in the industry concerned; members representing the Medical Research Council's Statistical Committee; and members representing the Industrial Health Research Board. "It has been the duty of the scientific members to see that such inquiry has been framed and carried out strictly in accordance with scientific requirements."

In 1934 this procedure was applied to the investigation of the alleged excess of gastric sickness among omnibus workers, and a committee was appointed consisting of three members from the London Passenger Transport Board, three from the Trade Union of Transport and General Workers, and three independent scientific members. The committee unanimously decided that an answer must be sought to this question: "Do omnibus workers suffer from digestive complaints more frequently or more severely (or both) than other groups of workers of similar economic and social position?" The problem of causation could not be tackled until the question of incidence had been settled. To begin with, the inquiry had therefore to be statistical.

As Dr. Bradford Hill points out in his introduction, a recorded sickness rate is the end-result of many factors, the separate influences of which are not measurable. It was therefore important to choose, for the purpose of the investigation, a comparative group of workers for whom such extraneous influences as economic position, type and severity of occupation, degree of unemployment, sickness benefits, etc., were equivalent to those to which omnibus workers are subjected. Tramway workers were unanimously chosen for the comparative group, and the investigation was limited to London. Although a number of ill-defined complaints may be included under the term "gastric," there appeared to be no grounds for believing "that what was termed 'gastric' in busmen covered a wider number of conditions than did the same term as applied to tramway men." In the preface to Dr. Bradford Hill's able report it is stated: "It may now seem fortunate that the Board were alert to the problem, and were able to make a scientific and detached investigation before the question at issue became a matter of public controversy."

We reprint below Dr. Bradford Hill's conclusions, references to tables being omitted.

Summary and Conclusions

1. An examination has been made of the sickness records of omnibus and tramway workers in the employment of the London Passenger Transport Board, with the object of seeing whether the omnibus workers have an abnormal sickness experience from diseases attributed to gastric causes. The special committee supervising the inquiry agreed that the tramway workers should be taken as a standard of comparison, it being a belief of the men's Trade Union representatives that these workers are not affected by gastric illness to the same extent as the omnibus workers.

2. The sickness data used were extracted from the records of the London Passenger Transport Board, and related to *all periods of illness of fifteen days' duration or longer, the numerically large mass of shorter and less serious periods being ignored.* The diagnosis of the cause of sickness that had to be used was, usually, that given by the panel practitioner on the worker's first certificate of incapacity. It is certain that numerous errors will arise from this, but a test specially carried out showed approximately the same degree of error with regard to gastric sickness in all the occupational groups (for sickness of at least three weeks' duration).

3. The data were extracted for the years 1925–6 and 1933–5, and relate in all to more than a million and a quarter days of sickness. By means of the figures for the earlier years it was hoped that it might be possible to see whether, with changing conditions of the working environment, any changes in the sickness experience had occurred. It was found, unfortunately, that in 1925–6 the diagnosis of the cause of sickness was so frequently missing from the omnibus workers' records that these data were too unreliable to be put to any further use.

4. The analysis of the sickness experience of the occupational groups has, consequently, been confined to the data relating to the years 1933–5, in which years 871,258 days of sickness (of durations fifteen days or more) were recorded. Of this total 17,974 days lacked a diagnosis of the cause of sickness and were excluded. The final analysis therefore relates to 273,150 days of sickness recorded for omnibus drivers, 310,180 days for omnibus conductors, 138,050 days for tramway drivers, and 131,904 days for tramway conductors.

5. It is known that the age distributions of the omnibus and tramway workers differ considerably, more of the latter workers being at the higher ages of working life than of the former. It has therefore been necessary to compare the occupational groups age by age, and in reaching a comparative figure for all ages to allow for the differences in the age distributions. The allowance has been made by calculating for the omnibus drivers the figures that they would have shown in each of four age groups, and, by summation, at all ages, if they had the same sickness experience in those age groups as the tramway drivers. The omnibus conductors have been compared in the same way with the tramway conductors.

6. By these means it is found that the omnibus drivers at all ages had in 1933–5 a relative excess of gastric sickness (that is, in proportion to sickness from all causes) of 12–14 per cent. over the figure shown by the tramway drivers. In the same way it is found that the omnibus conductors at all ages had a relative excess of gastric sickness of 15–18 per cent. over the figure shown by the tramway conductors.

7. Expressed in a slightly different way it is found that, roughly, one day in six and a half of the total days of sickness (of over two weeks' duration) recorded by the two groups of omnibus workers was attributed to gastric causes, whereas if they had had the same experience as the comparable tramway groups the ratio would have been one day in seven and a half.

8. This relative excess varies very considerably with age. There is no clear evidence that the omnibus drivers suffered relatively unfavourable rates from gastric causes either at ages 20–29 years or at 50 years and upwards. The relative excess of sickness from these causes (in proportion to all causes) was confined to the ages 30–49, at which it amounted to some 20 per cent. in days of sickness experienced and some 13 per cent. in number of periods recorded. But at these ages their total sickness experience—that is, from all causes—was not unfavourable in comparison with that of the tramway drivers.

The relative excess of gastric illness (in proportion to all causes) amongst the omnibus conductors was mainly derived from ages 20–39, at which it amounted to 34–35 per cent. both for days of sickness experienced and number of periods recorded. But at these ages their total sickness experience—that is, from all causes—was not unfavourable in comparison with that of the tramway conductors. Since the excess of gastric sickness at all ages was 15–18 per cent. for conductors, it follows that this higher figure at ages 20–39 must be balanced by lower figures at other ages. In fact, though at older ages the total sickness experience—that is, from all causes—of the omnibus conductors was in excess of that recorded for the tramway conductors, there was no evidence at these ages of a relatively greater liability of the former to diseases of the gastric system (that is, in proportion to sickness from all causes).

9. The age groups in which the relative excesses of gastric illness amongst the omnibus workers are found are numerically important. About three-quarters of the total number of omnibus drivers are of ages 30–50, and about two-thirds of the omnibus conductors are of ages 20–40.

10. In short, taking only sicknesses of over two weeks' duration and a wide group of diseases attributable to gastric causes (and the original data did not, it was held, justify any subdivision of this group), it was found that there was, in 1933–5, some excess of gastric illnesses recorded amongst the omnibus workers as compared with the tramway workers in those age groups to which the majority of the former belong, though at these ages the total sickness experience, from all causes, of the omnibus workers was rather more favourable than that of the tramway workers.

[1] Report No. 79. H.M. Stationery Office. (6d., postage extra.)

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SURGICAL TREATMENT OF ESSENTIAL HYPERTENSION

To those interested in the recent development of surgery applied to the sympathetic and vascular systems it must long have been evident that the problem of essential hypertension would soon focus the attention of some of the more hardy pioneers in this field, for, as in all other obscure affections of the vessels, the belief has been widely held that essential hypertension is primarily a disorder of the sympathetic nervous system. And since the older physiologists taught the paramount importance of the splanchnic area in the control of the arterial pressure, operations for the relief of hypertension have chiefly been designed to interrupt the vasoconstrictor fibres to the abdominal viscera.

One of the simplest operations, developed by Peet and his collaborators at Ann Arbor, is supradiaphragmatic resection of the major and minor splanchnic nerve and of the tenth, eleventh, and twelfth thoracic ganglia on both sides. This has been performed on 100 patients suffering from essential hypertension with an operative mortality of 4 per cent.; in fifty-four cases followed from four to twenty-three months after operation the subsequent mortality was 15 per cent.[1] Freyberg and Peet[2] have described more fully the results in forty-eight cases followed for three months or longer. In nearly every case the blood pressure abruptly fell immediately after operation, but in most instances it rose later to a variable degree. Freyberg and Peet state that when the patients were last examined the blood pressure was within normal limits in 12.5 per cent., was significantly below the pre-operative level in 37.5 per cent., remained unchanged in 48 per cent., and had risen in 2 per cent. In those patients whose blood pressure was lowered the renal function, as estimated by the urea-clearance test, was unaltered or actually improved after operation. Relief of such symptoms as headache and dizziness is said to have been definite in about 68 per cent. of cases. Perhaps the most remarkable post-operative result was the resolution of albuminuric retinitis in five cases of malignant hypertension[3]; in four of these the blood pressure was much reduced; in one it was unaltered. A second operation—bilateral section of the anterior spinal nerve roots from the sixth thoracic to the second lumbar inclusive—has been performed in the Rockefeller Hospital, New York.[4] Besides interrupting the vasoconstrictor nervous impulses to the abdominal viscera, this operation paralyses the abdominal somatic muscles, thus, it is hoped, promoting the pooling of blood in the veins of the belly. The operation is performed in two stages, the requisite length of dura mater being exposed at the first and the nerves divided at the second. Twenty patients with essential or malignant hypertension and systolic pressures over 200 mm. Hg were so treated: of these one died on the table in a one-stage operation; one died of a streptococcal infection after the first stage; one developed a transverse myelitis after the dura had been exposed, with subsequent partial recovery of the paraplegia; and one refused the second operation. Sixteen patients on whom the operation was successfully performed were followed up for periods of one to twenty-nine months; of these three died later. In all cases the blood pressure fell slightly or considerably at the end of the operation and thereafter showed a variable tendency to rise; renal function was not impaired by the fall in the blood pressure. Subjective improvement was pronounced in fourteen patients.

These two operations seem to yield similar results. In a few cases there is a considerable and prolonged fall in blood pressure and marked symptomatic improvement; in others the operation seems to have had little permanent effect. Why there should be this discrepancy is not at all clear. Essential hypertension is merely a convenient label applied to a condition in which more than one aetiological factor may be involved, and the operative results may differ because at least two separate diseases are under consideration. The facts available do not, however, add substance to this speculation, for of two patients apparently similar in every respect one may respond well and the other not at all; some patients with the malignant type of hypertension obtain great relief and others none. Peet considers the only contraindications to operation are an age greater than 50 years, a rather high non-protein nitrogen content of the blood, cardiac failure, and possibly cardiac asthma. Page and Heuer's best results were in young women with an unstable temperament. Post-operative mortality figures make it doubtful whether splanchnic denervation materially alters the course of the disease. While judgement on this point is clearly premature, the doubt, together with the absence of any indication as to which patient is likely to respond favour-

[1] *Univ. Hosp. Bull.*, Ann Arbor, 1937, **3**, 1.
[2] *J. clin. Invest.*, 1937, **16**, 49.
[3] Fralick and Peet (1936). *Arch. Ophthal.*, Chicago, **15**, 840.
[4] Page and Heuer (1937). *Arch. intern. Med.*, **59**, 245.

ably, will probably prevent the wide practice of such operative measures until more information is available.

Whatever its direct contribution to the relief of human suffering, surgical intervention, when its results are carefully observed, rarely fails to add precision to our conceptions of the mechanism of disease. Here the failure of splanchnic denervation to lower the blood pressure permanently in at least half the cases proves that in them the raised blood pressure was not due to splanchnic vasoconstriction of nervous origin. This agrees with the experimental results of Prinzmetal and Wilson[5] and of Pickering,[6] who independently found that in essential and malignant hypertension the vessels of the forearm and hand remain abnormally constricted when deprived of vasoconstrictor nervous impulses. Page and Heuer regard the long-lasting fall of blood pressure in some patients as evidence for the vasomotor hypothesis; but it must be noted that the most conspicuous diminution of blood pressure in their series was in the patient who developed a transverse myelitis after exposure of the dura mater and whose anterior roots were never divided. Peet, on the other hand, thinks that the favourable results in some cases may be brought about by dilatation of the renal vessels, the idea being that in certain instances hypertension is due to renal ischaemia, a measure which Goldblatt and his co-workers[7] have shown to produce a marked and prolonged rise of blood pressure in the dog. As yet there is no evidence for this interesting speculation.

THE PREVENTION OF SILICOSIS

During the past few years the problem of silicosis has been very actively attacked in Canada by a group of investigators under the general direction of Sir Frederick Banting, and the scene of some of this work has been the McIntyre Porcupine Gold Mine, Ontario. Among the new facts that have emerged is the influence of noxious gases produced by blasting on the development of silicosis. Underground workers exposed to these gases in addition to dust appeared to be more liable to develop the disease than those in the crushing houses above ground, although the dust concentration in the latter was considerably greater than in the mine itself; the suspected adjuvant action of gases was then confirmed by animal experiment by W. D. Robson and others.[8] During the course of these and other experiments a technique for dusting animals has been developed which appears to be certain and expeditious in its results. The animals are placed in chambers containing a tumbling box in which loose quartz is rotated in a grinding medium, producing a high concentration of particles of suitably small size in the air of the chamber. Daily exposure of rabbits to quartz dust in this apparatus for the comparatively short period of six months or rather less apparently produces typical nodular silicosis with regularity, and hence furnishes a strictly imitative and reliable method of experiment for testing the effects of other dusts. The latest product of this series of researches, which is now reported by J. J. Denny, W. D. Robson, and D. A. Irwin,[1] breaks entirely new ground, and will be received with much interest. It is concerned with a possible method of reducing the solubility of silica in the tissues.

No one now disputes that siliceous materials cause fibrosis only after they have passed into solution in the body fluids, and studies of the solubility of various minerals which are now in progress may throw a good deal of light on their varying capacity for causing fibrosis. It is also well known that alkali increases the solubility of silica; cases of rapidly progressive silicosis have resulted from exposure to dust from a commercial product containing free alkali in addition to a siliceous powder. The possibility that some such action as this might be at work in accelerating the production of silicosis in miners does not appear to have been considered as fully as perhaps it should be, and the first part of the new work now reported in Canada consists of experiments which show that *in vitro* the solubility of quartz is increased by the addition of carbonates or hydroxides of magnesium and calcium. Such substances as these, if present in quartz-containing rock, may therefore exercise an important influence on its effect in the lung. There is, however, another and extremely interesting observation, which is that there are means of reducing the solubility of siliceous material. It is not altogether clear why the particular substance was chosen, and the authors themselves confess that they do not understand how it acts, but they find that the solution of quartz is almost entirely prevented *in vitro* by adding finely particulate aluminium. Moreover, if quartz dust is mixed with aluminium dust of the same order of particle size, the proportion of aluminium in the mixture being less than 1 per cent., this dust does not produce nodular fibrosis in the rabbit's lung. In spite of the presence of as much quartz in the lung as serves to cause proliferative fibrosis in controls receiving no aluminium, the only effect produced is a foreign body type of reaction.

[5] *J. clin. Invest.*, 1936, **15**, 63.
[6] *Clin. Sci.*, 1935-6, **2**, 209.
[7] *J. exper. Med.*, 1934, **59**, 347.
[8] *Canad. med. Ass. J.*, 1934, **31**, 237.

[1] *Canad. med. Ass. J.*, 1937, **37**, 1.

It is evidently much too early to assess the significance of this observation fully, and it is also certainly far from clear whether its direct application in silicosis prevention is practicable. At the same time it does encourage the hope that on some such lines as these a method may be found either of so treating mine dust that its dangers will be much reduced or of treating exposed workers themselves in such a way that the consequences of their inhaling dangerous dusts will be minimized.

THE DEVELOPMENT OF CARDIAC ENLARGEMENT

The clinical methods of palpation and percussion are no longer to be relied upon to determine early changes in the size of the heart, for these methods are of limited use even in estimating slight enlargement of the left ventricle. Early alterations in the size of the heart are as a rule to be recognized only by radiography, the study of which has led to the separation of a variety of changes in the shape of the heart, characteristic of corresponding aetiological conditions. But the rate at which enlargement develops and the effects upon it of functional changes in the heart have remained relatively obscure, and for this reason the recent contribution[1] by J. H. Palmer is welcome. Serial teleradiograms and a few orthodiagrams of the heart in various conditions were taken over a period, in most cases, of several years: such serial records are difficult to collect in large numbers and therefore only a few cases are reported in each group. The change in the size of the heart with the advent of congestive failure is of fundamental importance, and Palmer finds that, after allowance is made for alteration in the level of the diaphragm—and, more rarely, for the effects of pericardial effusion—the increase is not great: what increase there is involves chiefly the auricles and superior vena cava. Nor is the disappearance of congestion accompanied by much diminution in size. Closely connected with the subject of congestive failure, and especially when associated with tachycardia either simple or due to one of the arrhythmias, is the problem of acute dilatation of the heart. By this is implied a rapid enlargement, even within a few hours, and, although it has long been accepted as a reality, satisfactory proof of its existence has not been forthcoming. Palmer's observations on congestive heart failure, tachycardia, the arrhythmias, and on the heart in acute nephritis—conditions in which there is a sudden increase in the load on the heart—negative the view that acute dilatation occurs. Most cardiac disease ends in failure, and when this happens the localized early enlargement is found to be supplemented by a more or less general increase in size. This is explained on the theory of back pressure—now once more in favour—as being due to the extension of engorgement from the chamber primarily affected to those behind it. Another factor thought by the author to help in the production of such generalized enlargement—or at least the appearance of a symmetrical increase—is the pericardium: when the limit of its extensibility in one direction is reached it will compel further increase in size in others. Although it is usual in cardiac disease to find gradual increase in size and gradual impairment of function, there is reason to believe that so long as the load remains constant and no pathological changes occur in the muscle the size remains fairly constant. In support of this certain cases of valvular disease and hypertension are mentioned. Progressive enlargement without obvious cause is perhaps often to be explained by coronary atheroma. Age may play an important part in determining both the extent of enlargement and the rate at which it takes place, and if, as Palmer's observations suggest, certain conditions such as hypertension have greater effects in both these respects in the young than the old, the greater capacity for growth of the tissues of the former serves as a possible explanation. The general validity of this conclusion, however, remains to be proved. Certainly there are exceptions—for example, the very slight enlargement seen in some young people with coarctation of the aorta and hypertension. The work embodied in this report attacks problems that have been long waiting solution, but which, because of the prolonged and laborious investigations necessary, have remained obscure. They should, and doubtless will, be continued and extended by others.

[1] *The Development of Cardiac Enlargement in Disease of the Heart: A Radiological Study.* By J. H. Palmer. Med. Res. Counc. Spec. Rep. No. 222. H.M. Stationery Office. (1s.)

PHYSICAL EDUCATION IN GERMANY

A delegation consisting of senior officials of the Board of Education and the Scottish Education Department and a few other experienced observers lately visited Germany at the invitation of the German Government in order to study methods of physical education in that country. The report of this delegation (Educational Pamphlet No. 109) has now been published as a pamphlet of eighty pages by H.M. Stationery Office, price 1s. It deals with physical education in the schools, in the universities, in the various national associations, including the Hitler Youth, and in the organization known as Kraft durch Freude (Strength through Joy). It is mainly a descriptive document, but it also attempts to assess values and to compare German methods with those adopted in this country. Discussing the "Napoli" Schools (National Political Educational Establishments), of which there are fifteen, and which are a new feature of the German educational system, the report says that the aim of these schools is to train boys with a natural capacity for leadership for political, military, and other posts of special importance and responsibility. Many thousands of applications for admission are received every year, but the entrance standard is high and only exceptionally gifted boys have any chance of being accepted.

"The Hitler Youth organization is under an obligation to look out for and suggest the names of outstanding boys, and the head masters of the schools travel all over Germany to interview likely candidates and discuss their cases with people who know them well. Before entry a

searching physical as well as intellectual test is set, and the parents' consent must be obtained. . . . The programme of the 'Napoli' Schools has been drawn up in accordance with the Führer's own ideas. The first aim is the cultivation of healthy, hardy bodies, patient of toil and fatigue and heat and cold, and inured to stress and strain. Next comes the development of mental capacity, the formation of character, schooling in the exercise of will-power and determination, and training in responsibility and leadership. The last—and avowedly the least important—aim is to give the pupils proficiency in book knowledge and a grounding in academic subjects generally."

Physical training departments have been set up in all the universities, and by Ministerial decree every member of the German student body has to undergo a course of elementary training in gymnastics, athletics, and games during his or her first, second, and third semesters—that is, for eighteen months. Thus physical training is now recognized as an essential part of the general training of youth, and is given as important a place in the university course as that held by academic subjects. The report says that the Hitler-Jugend is the most efficiently organized youth movement in the world. There seems little doubt that the entire German youth is, as it were, to be conscripted into it and educated physically, morally, and politically through it, and any boy who has not passed through the movement will be debarred from a professional career in the service of the State.

"There is no doubt whatever that the Hitler-Jugend has caught the imagination of the young people, and no pains are spared to ensure that it shall make the strongest possible appeal to their emotions and adventurous instincts, and to invest it with an aura of high romance. . . . He is encouraged to read books and magazines of a type that would hardly be allowed to find a place in any school library in this country, and when he does read fiction it is often of such a highly sensational character as to make the most daring school stories and 'bloods' published in this country seem utterly feeble in comparison."

Commenting on Kraft durch Freude, the report says that it is for the foreigner the most agreeable and possibly the most instructive phenomenon of the Third Reich. The idea is

"to teach the German worker sensible ways of occupying his leisure; and Kraft durch Freude boldly faces the fact that the vast majority of people do not want to spend a great deal of their spare time sitting at home and reading books; they want to get out into the open, to exercise their bodies, to play games, and to do things rather than think things with their fellows. It is constantly dinning into the worker's ears that a man's life is not all toil and labour, and points out that he has the right to demand of the State that it shall cater for his leisure in this manhood as it catered for his education in his childhood. National Socialism, he is told, recognized the justice and reasonableness of this demand, and is taking effective steps to see that he can every day look forward to a complete change of occupation and a jolly one at that—after he has passed through the factory gates in the evening."

The report concludes with a chapter which raises the pertinent question: Is not the present German preoccupation with the subject of physical training likely to go too far, and is there not already a tendency in that country to seek to develop the body at the expense of the mind and to regard it as a mere machine to be kept constantly tuned up to the highest possible pitch of efficiency? One thing greatly impressed the delegation: a tenseness and ultra-seriousness of expression among the young people seen at work in the schools and in the Hitler-Jugend.

THE ENDOCRINES IN THEORY AND PRACTICE

As endocrinology has been extending its frontiers so widely during the past decade or more, and as the practising physician must find it increasingly difficult to distinguish between the rational and the extravagant claims made on behalf of endocrine products, we invited workers in this field to contribute the articles which appeared weekly in these columns between October 17, 1936, and May 15, 1937. We understand that in one university medical students were told by their teachers to "read the articles in the *B.M.J.*" if they wished to be informed of "the latest" in endocrinology, and that similar advice was given to postgraduates at another teaching centre. The appreciation of this series shown by so many must be as much a source of satisfaction to our contributors as it is to us. In response to requests that the series should be collected in book form this has now been done, and a volume entitled *The Endocrines in Theory and Practice* is published this week by Messrs. H. K. Lewis and Son, Ltd., at the price of 9s. In this volume each ductless gland is dealt with from both the scientific and the clinical aspect. The clinical chapters will, we believe, give the man in practice sound guidance on the uses and limitations of endocrine therapy, and enable him to assess more accurately the value of the attractive brochures that arrive with his morning's post. He will also gain instruction from the scientific chapers, for an understanding of the physiology of the endocrines cannot but make for more intelligent therapeutics.

A DIGEST OF TREATMENT

Another attempt to help those who feel overburdened with the gradually increasing literature on medical subjects has been made in the form of a monthly review of therapeutics, entitled *Digest of Treatment*, the first number of which appears this month. It is small enough to carry in the coat pocket, consists of eighty pages, and each issue will contain about forty to fifty extracts of articles on treatment which have appeared in the 200 medical journals surveyed by the editorial staff. This new venture is carried out under the general editorial supervision of Dr. George E. Rehberger, and is published by J. B. Lippincott Company, Washington Square, Philadelphia, the annual subscription being 25s., post free. In a circular issued by the publishers it is stated that "the editors are given absolute freedom in making their selections—no selections are made because they are favourable to advertisers. No advertising of any nature will be carried."

OLD REGISTERS

An exhibition to delight the historical mind has been arranged at Somerset House in commemoration of the centenary of the office of Registrar-General, an event which was the subject of a leading article in these pages on June 26. The most interesting of the exhibits belong to a former time before the passing of the Registration Act. The parochial registers of the Established Church before 1837 remain in the custody of the Church itself, but the non-parochial registers have found their way into the possession of the General Register Office. They are mostly the registers of Nonconformist places of worship and Friends' meeting houses, but there are two classes of non-parochial registers outside the main stream of Nonconformist development. One of these consists of the registers of foreign Protestant churches, French or Walloon, established in England by refugees from Continental persecution, and the other of the registers of the Chapels Royal. An entry in one of these latter describes the death of Charles II on February 6, 1685, in which it is stated that the King was "seisd wth a most Violent fit of an Apoplexy w^{ch} terminated in an Intermittent feavor of which hee dyed about 12 the friday following." Among the Friends' burial registers is shown an entry relating to John Fothergill, who died on December 26, 1780, at Harpur Street, London, of, the certificate states, "a suppression of urine." Some specimens are shown in the exhibition of the registers of the Fleet and other prisons, where there was a disgraceful marriage market under a system established by clergymen who were in prison for debt. One of the most notorious of these clerics was Ashwell, who had, however, the merit of adding to his entries various pungent comments on the rude and squalid people who made him their tool. Half a dozen of his registers for the years 1740 to 1745 are exhibited. One of them contains an entry relating to the marriage of Samuel Gorton, surgeon, of Leek, Staffordshire, of whom it is stated, "He left his instrument case for the reconing of the Marriage and desired it might be kept a great Secret." Under the Registration and Marriage Acts of 1836 it is calculated that there have now, in the course of a hundred years, been entered, in round figures, nearly 75 million births, 48 million deaths, and over 22 million marriages in England and Wales. The entries made during these hundred years are comprised in the original registers deposited in the local register offices and in registers of certified copies stored in the vaults of Somerset House. A selection of entries relating to notable people have been arranged in the exhibition. One records the death of the Duke of Wellington of epilepsy on September 14, 1852; another of Charlotte Brontë of phthisis on March 31, 1855; another of Benjamin Disraeli, Earl of Beaconsfield, on April 19, 1881, the cause of death being stated as "Asthma, gout," and certified by Joseph Kidd, M.D. The most recent of the exhibits relates to the death of Thomas Hardy on January 11, of "syncope and old age." The exhibition also includes some of the early census returns. The system of enumeration down to and including the census of 1831 was such that no returns have survived which are capable of exhibition; but the plan adopted of schedules filled up by the enumerator and later by the householder himself has enabled some exhibits of great interest to be shown. Among these is the enumeration book of the census of 1841 for the royal household, Buckingham Palace. It is headed by the names of the Queen and Prince Albert and the Princess Royal, then aged six months. In this enumeration the ages of all individuals over fifteen are given only to the nearest preceding five years, so that the age of both the Queen and her consort is given as twenty, though in fact they were nearly twenty-two. The households of the Duke of Wellington, Charles Dickens, Thomas Carlyle, and others make a very interesting record, and there is also shown a cartoon by Cruikshank painfully illustrating the census troubles of a large family, and a later cartoon, artist not stated, in 1861, showing a stern paterfamilias filling up the return in the bosom of his family and questioning a reluctant maiden aunt. At the censuses from 1861 onwards the enumeration has been taken under expressly confidential conditions, and so the returns are not open to public inspection. A specimen volume of the 1931 census is included—one of over 30,000 such volumes for that one census—but it is shown closed.

PRIMITIVE TREPANNING

Research carried out in South Africa during the past decade has thrown a new light on the most peculiar of all living races—the Bushman. His fossil ancestors are known for a long way back; it is now clear he has come of a stock which was originally big-brained. No one has done more to unravel the Bushman's past than Professor M. R. Drennan, who holds the chair of anatomy in the University of Capetown. He has recently described examples of the surgical handiwork of the ancient Bushman.[1] Evidence of trepanning was found on six Bushman skulls, all of them from old burial-places and most of them being skulls of women. The ancient Bushman did not make a complete opening, but was content to scrape or chisel away only the outer table of the skull. This practice of incomplete trepanning was also employed by peoples, such as the ancient Peruvians and some modern Pacific peoples, who normally do the complete operation. The usual sites of operation in the Bush skulls are near the parietal eminences and on the upper part of the frontal. Hitherto trepanation has been regarded as confined to Berber peoples in North Africa, although instances are known from Abyssinia. Professor Drennan suspects that the scraping operation will yet be traced into palaeolithic times. In less expert hands one might doubt whether the lesions described can bear the full interpretation which Professor Drennan gives to them. His judgement in such matters will certainly carry weight with all experts in Europe.

In our advertisement columns this week the High Commissioner for India invites applications for the post of Director of the All-India Institute of Hygiene and Public Health, Calcutta, at a salary of £2,250 per annum.

[1] *S. Afr. med. J.*, 1937, **11**, 182.

ONE HUNDRED AND FIFTH ANNUAL MEETING OF THE

BRITISH MEDICAL ASSOCIATION

BELFAST, 1937

THE one hundred and fifth Annual Meeting of the British Medical Association will be held in Belfast this month, under the Presidency of Professor R. J. Johnstone, B.A., M.B., F.R.C.S., F.C.O.G., M.P., consulting surgeon, Royal Maternity Hospital, gynaecologist to the Royal Victoria Hospital, and professor of gynaecology, Queen's University, Belfast; he will deliver his address to the Association on the evening of Tuesday, July 20. The Sectional Meetings for scientific and clinical work will be held on Wednesday, Thursday, and Friday, July 21, 22, and 23. The Annual Representative Meeting for the transaction of medico-political business will begin on the previous Friday, July 16. The full list of officers of the seventeen Scientific Sections, the programme and time-table, information about accommodation, and other details of the arrangements for the Annual Meeting will be found in the *Supplement* this week. We publish below the fourth of a series of articles on Belfast and its surroundings. The first article appeared on January 30; the second on April 10; and the third on June 19.

THE CHARM OF NORTHERN IRELAND

It is part of the magnetism of Ulster that within easy reach of a capital city whose atmosphere is modern and to a large extent mercantile are cities and even towns and villages over which rests the aura of the old-world, where the air is redolent of legend, tradition, history, and romance. Here are the ruins of a settlement where pious monks cradled religion and learning when darkness and paganism prevailed in the outer world; beyond are castles and walls, which centuries ago resounded to the clash of arms, where history was made, and, in at least one supreme instance, the course of civilization in these islands affected. Armagh, Derry, Bangor, and Enniskillen—these and many other names leap the centuries and proclaim the glories of other eras. Within almost a stone's throw from Belfast were monastic centres like Bangor and Movilla, whose scholars went forth to spread the light of Christianity through Europe.

Thus it comes that Ulster provides a wonderful variety of interests within a small area—unique in its proximity to a large industrial centre and within easy reach of England and Scotland. It may be safely claimed that every taste is catered for by Nature and the inhabitants. Those who seek the mountains will find the Kingdom of Mourne or the wild Sperrins at their disposal; the coastal scenery of Antrim is unexcelled in Northern Europe and the lakeland of Fermanagh is accessible by excellent roads. The county roads as well as the secondary routes welcome the motorist, who is aided by a complete system of signposting, first-class surfaces, and the absence of that crowding to which the English road user is accustomed. There are rivers and streams in abundance for the angler; numerous courses to test the skill of the golfer; a wealth of scenic charm and beauty for the artist; ruins of ancient abbeys for the student; and fortressed cities celebrated in song and story for the historian. Those who visit Ulster for the first time will find that nowhere can time be more pleasantly occupied. His interests, no matter how diverse, will be catered for, and he will echo the remark so often made on leaving her hospitable shores, "I really must come back again."

Antrim

The road leading north out of Belfast along the shore of Belfast Lough passes through the town of Carrickfergus with its ancient Norman keep into the district of Kilroot, associated with the famous Dean Swift. A few miles further on is the pretty watering-place of Whitehead, and still further Larne, familiar to travellers as a terminus of the popular Larne-Stranraer cross-channel route, is reached. Larne is at one extremity of the famous Antrim Coast Road built over one hundred years ago; one side of the winding road is lapped by the sea, while on the other is a panorama of undulating hills, towering cliffs of limestone or basalt, wooded slopes with glens stretching far back into the country, and streams tumbling into the sea. The road extends for twenty-five miles to Cushendall round a succession of imposing headlands bordering glorious bays of golden sand and snow-white shingle. Of this famous road it has been said: "Had the engineer worked with a poet and a painter at his back he could not have laid his course more agreeably to the eye and imagination." The road passes through Glenarm and Carnlough to Waterfoot, where that to Parkmore branches off. This leads to Glenariff, the sweetest and most beautiful of the nine glens of Antrim. The very names of the hills and mountains sing with music—Trostan, Slieve-an-Aura, Lurigeden; they abound in legend of Ossian and the history of fierce encounters between the native Irish clans and the invading Scots, between MacDonnells and McQuillans. This part of Ireland was for many centuries a veritable storm centre in the relations of the two countries. The Glens have inspired the beautiful poems of Moira O'Neill and have induced Thackeray to call the district "Switzerland in miniature."

From Cushendall the road leaves the coast to rise over the mountain and pass through miles of peat bogs, past the fairy lake of Loughareema, and down to Ballycastle and the sea again.

> "Loughareema! Loughareema!
> Lies so high among the heather;
> A little lough, a dark lough,
> The wather's black and deep.
> Ould herons go a-fishing there,
> And seagulls all together
> Float round the one green island
> On the fairy lough asleep."

The motorist who is at all venturesome will not follow the tourist road to Ballycastle, but will proceed from Cushendall to Cushendun to discover a seaside village reminiscent of Cornwall in the beauty of its seclusion. Here lived Moira O'Neill, and hither come artists to interpret on canvas the varying moods of Nature in sea and land. From Cushendun a spectacular road leads along the coast, round Torr Head, negotiating many dangerous bends and steep hills. In Europe there is only the Grand Corniche to compete with it in scenery that really thrills.

Ballycastle is famous for its tennis tournaments, its striking view of Fair Head and the picturesque ruins of Bunna-Margy, a Franciscan abbey. The accessibility of Knocklayde and Glenshesk from Ballycastle to motorist or pedestrian is another attraction. Rathlin Island lies some seven miles from the coast, and on clear days Islay

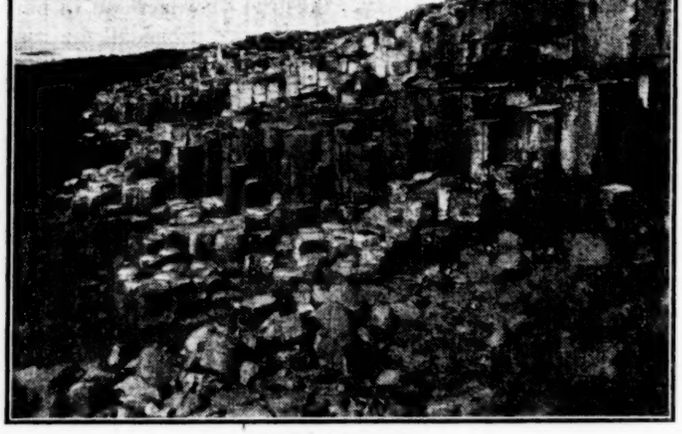
and Jura to the north and the coast of Argyllshire to the east are visible. It was on Rathlin that Robert Bruce took refuge after his defeat at Perth before finally avenging himself at Bannockburn; it was here also that the legend of Bruce and the spider originated. Of modern interest is the fact that Marconi's first experiments in wireless transmission were carried out between North Antrim and Rathlin. The road from Ballycastle leads westwards to the Giant's Causeway and Portrush. On the way are numerous beauty spots and scenes of interest. Kenbane Head, the village of Ballintoy, the rope suspension bridge at Carrick-a-rede, Whitepark and Murlough Bays form a succession of interests which anticipate the arrival at the Causeway.

Antrim Coast Road.

The Giant's Causeway

The Giant's Causeway is reputed to be one of the seven wonders of the world. There is nothing elsewhere like it, and herein lies its unexampled quality. The formation of octagonal columns, suggestive of the work of bees but on a grand scale, has been explained by geologists, but the native guide still maintains the theory of giant origin (Finn McCoul) with an eloquence that lacks nothing in conviction! The Causeway reaches out to sea with its "Giant's Well," its "Wishing Chair" among its novelties; along the cliffs are the "Chimney Stacks," the "Organ," the "Giant's Loom," and "Lord Antrim's Parlour," and at every point glorious views of sea and coast. The exploration of the caves of the head by boat is an experience, doubtless excelled by the Blue Grotto of Capri, but still unique on the coastline of these islands.

On leaving the Causeway the motorist passes through the village of Bushmills to meet the electric tramway which runs along the roadside to Portrush, the first electric tramway to be opened in the British Isles. Dunluce Castle stands on a promontory separated from the mainland by a deep chasm spanned by a narrow bridge. This picturesque ruin was obviously an extensive fortress with a communication via a cavern with the sea by which provisioning was carried out during siege. The origin of the castle is uncertain, but it is mentioned in fifteenth century history as having been occupied by McQuillans, MacDonells, and various Elizabethan commanders. Rounding the headland one sees Portrush in the near distance with the Donegal Highlands in the background. Between the road and the sea are the undulating hills where are laid the links of the Royal Portrush Golf Club, one of the three finest golf courses in Ireland and the equal of the most famous in England and Scotland.



Giants Causeway.

Portrush is a popular seaside resort. It is ideally provided with a three-mile strand of golden sand extending to the White Rocks, magnificent bathing facilities, and all the amenities for an ideal holiday with the sea breezes from the open Atlantic. Near by is Portstewart, quieter and more restful, but also provided with its golden strand, its golf course, and bathing. Across the River Bann (famous for its salmon fishing) is Castlerock, which lies on one of the routes to Derry.

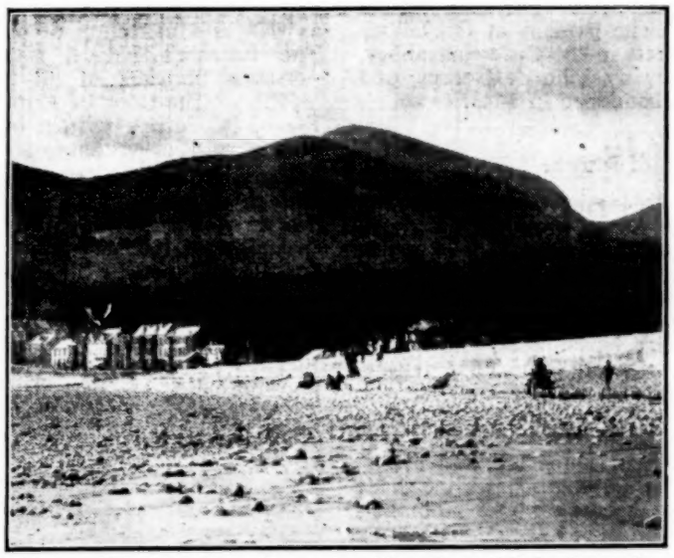
Londonderry

Derry is famous for its place in history and as the "Maiden City" of Ireland. It dates from the sixth century, when St. Columba founded an abbey there. History records the struggles of the natives against the Danes, the Anglo-Normans, and the English, as well as its status in the ecclesiastical realm. Derry was the scene of many battles through the ages. James I in his project of the plantation of Ulster included the creation of the county of Londonderry as well as the corporation of the city, conveying the whole county to "six and twenty discreet citizens of our City of London." These were called the "Society of the Governor and Assistants, London, of the new plantation in Ulster, within the realm of the Kingdom of Ireland." Thus ancient Derry became Londonderry, and the Irish Society was formed to promote religion, education, and industry in the newly constituted county. The Society has retained Londonderry and Coleraine as well as the fisheries of the Bann and the Foyle; the remainder of the properties was divided among the London Companies of Vintners, Grocers, Drapers, Goldsmiths, etc. To this day the Governor, who must be an alderman of the City of London, and members of the Society pay an annual visit to their properties.

The historic walls of Derry were completed in 1619 and the cathedral in 1633. In 1641 there was warfare again, in 1649 a siege of twenty weeks, and in 1688 the gates were closed by the apprentice boys against the soldiers of James II, and in April of that year began the famous siege of Derry, termed by Macaulay as the most memorable in the annals of the British Isles. For 105 days the beleaguered garrison and citizens suffered privation and hardship from which 7,000 persons died. Then came relief when the *Mountjoy*, leading the relieving ships in the Foyle, struck the boom of floating beams and drew alongside the quay, bringing succour to the survivors and setting to flight the investing army of James. The walls are in an excellent state of preservation so that the visitor

can readily walk around them and mentally recreate the scenes of 300 years ago. He can inspect "Roaring Meg," one of the guns used during the defence. He should not fail to visit the cathedral, rich in historical souvenirs of a city whose name at once "suggests religious animosities and protracted sieges."

Derry is a city of steep hills on the banks of the Foyle. It is the centre of the shirt-making industry and distributes its products far and wide; some thirty factories are engaged in this work. It is the natural distributing base for the neighbouring county of Donegal, and is an admirable centre for historical research, for interest, and for beauty. The Donegal Highlands are easily accessible, while to the south are the Sperrin Mountains and Lough Erne. The direct route to Belfast leads through the mountains, across Glenshane Pass, through Maghera, Toome, and Randalstown, to Antrim and Belfast.



Mourne Mountains from Newcastle: Slieve Donard in background.

Lough Neagh and Antrim

Less than a mile outside Antrim is Lough Neagh, the largest inland lake in the British Isles. Surrounded by wooded country it borders five counties with a hinterland of mountain in all directions. To the north is Slemish, on the slopes of which St. Patrick herded Milchu's pigs; not far from this spot he made his first convert to Christianity. Near to Antrim is one of the two perfect round towers in Ulster, although remains of others are found elsewhere. The origin of these peculiar structures was a subject of controversy among archaeologists, but all now admit that there is a close relationship with religious establishments of the early Church in Ireland. In the town of Antrim stands the cottage in which Alexander Irvine was born, author of one of the most poignant stories of Irish peasant life, *My Lady of the Chimney Corner*. Within a few miles of Antrim is Aldergrove, the R.A.F. aerodrome, and on the way to Belfast the route can include Ballinderry, where still stands Jeremy Taylor's church. It was here that the famous Bishop took refuge from the Puritans, and here he penned many of his works. Within seven miles of Belfast is Lisburn, rich in famous associations. Louis Crommelin, a Huguenot refugee, settled in Lisburn, and was appointed by William III to organize the linen industry in Ireland. His genius has borne fruit in the establishment of the staple industry of the North. Jeremy Taylor died in Lisburn, but the great figure is Nicholson of Delhi, who, with Henry Lawrence in Lucknow and John Lawrence in the Punjab, have engraved their names for ever in the history of the suppression of the Indian Mutiny.

Lough Erne. [*Baird, Belfast.*]

Down

Among the Irish counties Down is characterized by its undulating surface, its fertility, and its coast. The inlet of the sea (Strangford Lough) is notable for its multitude of islands. North Down, including the peninsula between the eastern shore of Strangford Lough and the Irish Sea, known as "the Ards," is famous for the ancient seats of learning at Holywood, Bangor, Movilla, and Greyabbey. On Strangford's opposite coast are a numbers of others at Ardmillan, Mahee and Nendrum, Raholp and Saul, the latter mentioned marking the landing-place of St. Patrick.

Along the southern shore of Belfast Lough the road leads through Holywood, past Clandeboye, to Bangor. Clandeboye is the seat of the Marquess of Dufferin and Ava. On the highest summit of the estate stands Helen's Tower, named after Helen, Lady Dufferin, granddaughter of Richard Brinsley Sheridan and great-grandmother of the present Marquess. Many literary notabilities have paid tribute to this gracious lady, Browning, Tennyson, Houghton, and Kipling among them, their contributions being inserted in the walls of the reception room of the tower. Perhaps the words of Tennyson are best known:

> "Helen's Tower, here I stand,
> Dominant over sea and land,
> Son's love built me and I hold
> Mother's love engraved in gold,
> Love is in and out of time;
> I am mortal stone and lime. . . ."

Bangor, a popular watering-place twelve miles from Belfast, was once the seat of a great monastic foundation, known throughout Europe as a centre of learning and piety from which went forth famous missionaries to various parts of the Continent. In Milan is preserved a priceless manuscript, the book of anthems used in Bangor Abbey in the seventh century. To-day Bangor is a populous borough, and is regarded by many as the villa town of Belfast. Its views include those of the Antrim coast on the north and the outline of the Wigtownshire coast to the east. Yachting is full of interest in July, when the annual regatta attracts the famous yachts from the Solent. It was from the Royal Ulster Yacht Club that the late Sir Thomas Lipton issued his challenges for the America's Cup with his famous *Shamrocks*. These graceful boats, along with their competitors, are as familiar here as on the Clyde.

From Bangor the coast road leads southward through Donaghadee, Ballywalter, and Cloughey to Portaferry, and thence northward along the east coast of Strangford

Lough to Newtownards, the seat of the lace embroidery industry. The monument on Scrabo Hill, erected as a memorial to the third Marquess of Londonderry, dominates the picture and can be seen from many parts of Ulster. Newtownards lies at the base of the Ards peninsula, and is notable for the beauty of the countryside and the distant views of the Mourne Mountains. Mountstewart, the residence of the Marquess of Londonderry, occupies an ideal situation. Its beautiful gardens, stocked with the rarest and choicest of blooms, are a feature not easily forgotten. The gardens at Greyabbey are overshadowed by the interest in the Cistercian abbey, founded in the twelfth century by John de Courcy, and occupied until it was finally abandoned in 1543.

The Kingdom of Mourne

As County Antrim is famous for its Giant's Causeway and glens, so is the county of Down proud of the splendour of the Mountains of Mourne, at the foot of which lies Newcastle. One route to this seaside town is by way of Killyleagh to Downpatrick, close to which St. Patrick founded two churches in his evangelizing mission. It is claimed that Downpatrick is his burial-place, and a huge stone marks the site of his reputed place of sepulture. The sandy low-lying coastline is in marked contrast with the ruggedness of Antrim, so that all the seaside towns and villages of Down are attractive for their sandy beaches and strands. Ballyhornan, Dundrum, and Tyrella lead to the climax of Newcastle nestling beneath the shade of Slieve Donard, the part of Mourne whose mountains "sweep down to the sea."

Newcastle owes its position in popular favour to its natural attractions. It is the home of the Royal County Down Golf Club, one of the most famous and best known courses in the world. Demesnes and gardens abound on the slopes of the mountains, and the horticulturist will find his time passing all too rapidly as he envies the possession of shrubs and alpines abounding in the luxuriance of their growth. From Newcastle the beauties of the Mourne Mountains can be explored by car or on foot. Slieve Donard appears to rise from the water's edge; Slieve Bignian with its crown of ragged crags lies to the south, with Bernagh and Commedagh and the other peaks in company. The Silent Valley has been impounded to provide an enormous reservoir which supplies Belfast with an abundance of excellent water.

From Newcastle the road continues round the coast through Annalong and Kilkeel to Rostrevor, sheltering under the southern aspect of the Mournes where they reach Carlingford Lough. The climate is particularly mild, so that exotic shrubs and plants grow as in the profusion of a Riviera climate. Woods of oak, ash, and pine abound on grassy mountain slopes. Carlingford Lough is an inlet between the mountains of Mourne on the north and those of Louth on the south. The coast road from Rostrevor provides many changing views of both until Newry, the "gap of the North," is reached. Newry is one of the most ancient towns in Ireland and the centre of a district teeming with historical memories. It lies on the main Dublin-Belfast road, leading through Banbridge, Dromore, Hillsborough, and Lisburn to Belfast.

Armagh

The history of Armagh dates to the pre-Christian era, and it is reputed to have been the seat of the warrior Queen Maha in 300 B.C. Much of the history of Ireland could be written around the cathedral city of Armagh, the ecclesiastical centre of Ireland since the days of St. Patrick. The Protestant Cathedral stands on the site where Patrick built his first cathedral in 445, and some maintain that a portion of the present building dates from the eighth century. Within the sacred edifice are famous sculptures as well as regimental colours, including a French colour (the only enemy colour ever captured within the British Isles) taken by the Armagh Light Infantry in 1798. Brian Boru, famous in the ancient history of warfare in Ireland, was buried close to the cathedral site, after a battle in which were defeated the Danes and Northmen who had ruled Armagh and maintained a fleet on Lough Neagh. The Roman Catholic Cathedral reared on a hill on the opposite side of the valley is notable among other features for the beauty of its ceiling mosaics and its peal of bells. The observatory, dating from 1790, contains the largest telescope in Ireland as well as a collection of unique clocks and instruments. The Primate's Palace, standing in its own grounds, possesses portraits of all Primates since Henry Usher (1595). "The Book of Armagh" includes a record of the life of St. Patrick written by himself and a copy of the New Testament written in 807.

From Armagh the road leads through Portadown and Lurgan to Lisburn and Belfast. Portadown and Lurgan are thriving industrial towns just five miles apart, set in the midst of the fruit-growing country which has gained for Armagh the title "The Garden of Ulster." In springtime the multitude of orchards in their blaze of blossoms would evoke the admiration of the most prosy, and would compare with the magnificence of the festival of cherry blossom in Japan. "Æ" (G. W. Russell), poet, painter, and journalist, was born near Portadown, and in the town Sir Robert Hart ("the most influential and most upright European the East has ever known") saw the light of day.

Tyrone and Fermanagh

To the south and west the road from Armagh leads to Dungannon and Enniskillen; or the east through Banbridge to the Mournes and Newcastle. Strabane, Dungannon, and Omagh are important towns in Tyrone, the first mentioned being the gateway to Donegal and its highlands. Dungannon is the educational centre, dating from the erection of the Royal School founded by James I. Omagh is the county town and administrative centre. The range of the Sperrin Mountains lies in Tyrone and can be easily explored from Omagh. It provides a magnificent panorama of bleakness and grandeur, of wildness and beauty, that is not always realized. Gortin Gap, Barne's Gap, the Glenelly River, and the village of Sperrin are well worth including in a circular tour from Omagh. The rivers are notable for their angling resources, so that the Mourne and the Blackwater among many others have their devotees of this art.

From Dungannon or Omagh the town of Enniskillen, the capital of Fermanagh, the stronghold of the chieftain Maguires, is on the route to the west. The town has its situation on an island in the river which connects Upper and Lower Lough Erne. It occupies a distinguished place in the annals of the British Army in that two regiments, the 6th Inniskilling Dragoons and the Royal Inniskilling Fusiliers, originated and developed out of the town. Enniskillen, however, has other claims upon our attention in view of its relation to Lough Erne. The lower lough provides a sheet of water studded by innumerable islands covered with trees and a luxuriant growth to the water's edge. This famous lakeland area of Ireland compares favourably with the better-known Killarney, and yields nothing in its appeal as a beautiful picture. An excellent motor road winds for some twenty-five miles along the southern shore to Belleek, noted for its potteries, and on across the border to Ballyshannon, Bundoran, and the Atlantic. The land border can be avoided by diverting at Boa Island and returning to Enniskillen along the opposite shore. A day spent in Tyrone and Fermanagh, in the Sperrin Mountains, on the shores of or afloat on Lough Erne, will provide scenes and experiences reminiscent of Killarney and the Scottish Highlands, or of English lakeland and Yorkshire moors. There is much of interest in and around Enniskillen, but all will wish to see the Round Tower on Devenish Island, the best preserved of

these ancient structures in Ireland. Standing some 80 feet high it retains the beauty of form and perfection as it did in the sixth century when it was constructed by St. Molaise.

There is much else to be seen in Ulster. This sketch, taking at random places of interest and character, serves but to indicate the variety which is available to every type of visitor. Good roads abound for the motorist; the angler will find his paradise in some well-known river or secluded stream; the golfer will test his skill on many courses of different qualities, but always midst beauty and harmony of scene. The archaeologist might spend a lifetime in studying the remains of an ancient civilization, and the historian will find that the history of the Empire has its thread in almost every town and village in the country. The inhabitants are reputed to be dour and undemonstrable, but this is an injustice as they are among the most hospitable of folk, although at times rugged in their character. The journey to Ulster is easily made by fast comfortable channel steamers. Every year there are increasing numbers who "discover" Ulster and return to make further acquaintance with its many attractions, not the least of which are the qualities of its kindly and thrifty peoples.

BRISTOL TUBERCULOSIS CONFERENCE

The twenty-third Conference of the National Association for Tuberculosis took place last week in Bristol by invitation of the City Corporation. The meetings in the University buildings were largely attended by tuberculosis officers and lay members of authorities throughout Great Britain. In the absence, through illness, of Sir Robert Philip, president of the Conference, appreciative messages were sent to him, and the chair was taken at the various sessions by Dr. R. A. YOUNG, Professor LYLE CUMMINS, and Dr. F. C. H. COUTTS.

Methods of Propaganda

Opening the first subject, "Propaganda and Publicity Methods," Dr. HARLEY WILLIAMS stressed the point that propaganda was one of the modern weapons in the fight against tuberculosis and sufficiently utilized. It was the science of good will, and should teach the profession the authorities, and the public the social meaning of the disease. At every turn we were handicapped by wrong attitudes, and these could be minimized by effective propaganda. He was afraid that doctors regarded it as somewhat unbecoming, and perhaps even unprofessional. This was unjustified if propaganda were properly understood. The programme must be regular and persistent, and should teach that disease was not inherited, that the worst victims were among the young, and that most of the cases of the disease were curable, given time and proper treatment.

Dr. VERONICA DAWKINS (East Anglian Sanatorium) described the measures in dealing with young women who had been patients in sanatoria. Health instructions throughout the country varied in amount, and were often omitted. Dr. Dawkins described the more advanced measures of popular treatment at present used in Germany, Italy, and among the negroes of the United States. Efforts in this country lagged considerably behind those of the Dictator nations. Most critics of propaganda were themselves non-constructive.

Mr. PAUL SCOTT RANKINE (Central Council for Health Education) detailed the new national campaign with which the Ministry of Health has entrusted his council. This is the first occasion in England when a Treasury grant has been given to aid popular health education. Its object next spring will be to popularize the use of the health services, and elaborate measures of advertising, newspaper publicity, and the use of films, leaflets, etc., are projected by the Central Council. Mr. Rankine described the many ways in which local organizations can co-operate in making these services fertile in their own areas.

Open-air Schools

The second subject, "Preventive Institutions (with Special Reference to Open-air Schools): (*a*) Environment," was opened by Dr. RALPH P. WILLIAMS (Board of Education), who described in a very lucid way the origin of open-air school methods, and showed lantern slides of the progressive improvements in the design of such buildings. It is evident that school architecture has been considerably influenced in the last thirty years by the open-air school as such. Open air stimulates metabolism, improves the appetite, increases resistance. The following children are chiefly selected for admission: (1) tuberculosis "contacts," (2) children convalescent after respiratory infections, etc., (3) children with defects of speech, eyesight, etc. There are at present in Great Britain only ninety-six day open-air schools and fifty-three residential open-air schools, but over three-quarters of the plans submitted to the Board of Education of ordinary school buildings are considerably influenced in design by the open-air principle.

Mr. GEORGE WIDDOWS (formerly architect to the Derbyshire County Council) described the evolution of open-air school design. Mr. NORMAN WHATLEY (head master of Clifton College) spoke on the conditions which should be provided for adolescent boys. He said that modern school buildings were a great improvement on the older ones, and diet to-day was regarded as a serious business. Sufficient sleep was of great importance, and was the chief advantage the public-school boy possessed over others less fortunate. He was afraid that perhaps conditions in public schools were tending to become too "soft." Physical instruction was popular just now, but probably the English would always prefer games to mere routine exercises. Mr. F. C. WILLIAMS (Bristol Corporation) described the development of specialized institutions under his committee, and the arrangements for staff, feeding, and transport.

Dr. N. T. K. JORDAN (Breconshire) described his experience in a residential institution for sixty boys, aged 5 to 14, in Mid-Wales. The cases were all ambulant, and included contacts with tuberculosis, sputum-negative cases of disease, and convalescents. Schools of this type were the answer to those who said that they were not paying enough regard to prevention in the campaign against tuberculosis. Dr. J. E. WILSON (Mansfield) described the remarkable open-air school at Berry Hill. He emphasized the different nature of the school curriculum as giving more attention to nature study and self-expression. Physical training received there twice as much attention as in ordinary schools. Dr. Wilson said he believed in special teaching of deep breathing to children, and argued that habits so formed are of permanent value. Open-air schools ought to be combined with nursery schools.

Nutrition and Tuberculosis

The second part of the subject dealing with nutrition in tuberculosis, from the preventive point of view, was opened by Professor J. A. NIXON (University of Bristol). Nutrition was not merely feeding; adequate rest, exercise, and emotional factors greatly influenced it. Dietetic measures by themselves would not prevent or cure tuberculosis. Nevertheless correct diet was an important factor in resistance. Professor Nixon emphasized the need for proper balance of the various ingredients, the avoidance of overstuffing and excessive doses of cod-liver oil.

Dr. P. A. GALPIN (West Ham) developed his theme of habit in diet. He found that many of his child convalescents

disliked green vegetables or fats, or were "faddy" in their habits of feeding. This was associated with catarrhal states. He himself followed the policy of controlling the child's diet in the light of physiological facts. Other speakers, notably Dr. MEIXNER (Illinois, U.S.A.), drew attention to those workers who found that children improved greatly when allowed, within limits, to select their own food. Other members of the Conference argued that social and economic conditions were the foundation of the problem. Between these two extremes opinion varied considerably.

The Tuberculosis Dispensary

The third subject, "Equipment and Activities of a Tuberculosis Dispensary," was opened by Dr. CAMPBELL FAILL (Bristol), who described the new central clinic about to be opened in Bristol, which has a population of nearly half a million. The object is to give personal attention to each patient, and adequate clinical and *x*-ray examinations. Dr. Faill said that the making of appointments facilitated the work. Reports in improved fashion were sent to the private doctors. There was complete co-operation and a common filing system with the maternity and child welfare department.

Dr. L. J. SHORT (Somerset) described the arrangements in a large and scattered rural area. There could be few clinic buildings and the scheme must depend largely upon the health visitor and a mobile tuberculosis officer. In some cases travelling expenses for patients were paid by the authority; in others the tuberculosis officer visited the patient at home. A summer camp for boy and girl "contacts" was proving successful in Somerset. Dr. MELVILLE HILEY (Glamorganshire) drew attention to the problems in a much depressed urban area. He emphasized the need for reassurance and the mental relief which accurate diagnosis must give. The general practitioner was still essential in the control of "contacts." In the Rhondda Valley 64 per cent. of the cases referred to the dispensary were found to have no tuberculosis.

Dr. MUNRO (Glenlomond) spoke of *x*-ray examinations, deploring the reliance placed upon a negative film as excluding tuberculosis. Radiology was an important weapon if wisely used, both in the "contact" cases and those who showed no symptoms of the disease, as well as in active patients.

The third day of the Conference was devoted to tours to Frenchay Park Children's Hospital and Ham Green Sanatorium, maintained by the Corporation of Bristol. The delegates also visited Winsley Sanatorium, near Bath—a voluntary institution.

At the annual meeting of the National Association, after the transaction of formal business, Dr. NOEL D. BARDSWELL gave an interesting account of his work on the Special Commission in Cyprus, of which a report appeared last week at page 30.

The following resolution was proposed by Dr. DIXON (Birmingham) and carried with acclamation:

> "That this Conference in the fiftieth year since the establishment of the Tuberculosis Dispensary by Sir Robert Philip, reaffirms its belief in the dispensary method of eradicating tuberculosis, and sends cordial greetings and congratulations to the Founder."

The first of a series of leaflets describing standard methods for the detection of toxic gases in industry has been issued by the Department of Scientific and Industrial Research. It is concerned with hydrogen sulphide and describes a relatively simple method of drawing a known volume of air through paper treated with lead acetate. The presence of hydrogen sulphide is indicated by a brownish staining of the test paper, and the degree of concentration of the gas can be gauged by comparison with a colour chart. The leaflet is obtainable from H.M. Stationery Office (price 3s. 6d. net).

BRITISH ORTHOPAEDIC ASSOCIATION

SPRING MEETING

The British Orthopaedic Association, under the presidency of Mr. W. R. BRISTOW, held its spring meeting in May in Copenhagen and Stockholm. The party consisted of some sixty members and their ladies.

Proceedings in Copenhagen

Three days were spent in Copenhagen, of which two were devoted to visiting the new Orthopaedic Hospital on the outskirts of the city. An attractive programme was arranged by Dr. Paul Guildal and his colleagues, and consisted of operative demonstrations and presentations of short papers.

Dr. GUILDAL gave an account of the functions of the Danish Orthopaedic Hospital, outlining the origin and progress of the treatment of the crippled child in Denmark. The whole service in Copenhagen was financed by the State, and the medical staff were all salaried officials. In a second paper he discussed the principles and results of the orthopaedic treatment of infantile paralysis. His practice and results corresponded closely with British views on this subject.

Dr. BENTZON advocated the use of drilling osteoclasis in preference to osteotomy, chiefly for the correction of outward curvature of the tibiae due to rickets. Through a small incision multiple drill holes were made in a transverse line at the apex of the deformity. The bone was then broken manually or with an osteoclast. Dr. Bentzon hoped that this simple operation would restore osteoclasis to favour, and suggested that experience would probably show that it had an even wider field of application. He next demonstrated the result of an operation for the treatment of paralysis of the gluteus medius. The insertion of the upper two-thirds of the gluteus maximus was brought upwards and forwards to occupy a true lateral position on the crest of the ilium. The patient whom he showed walked without a trace of limp, and could stand on the affected leg with perfect balance.

Dr. KIAER in the treatment of joint contractures had found infiltration with local anaesthesia of the capsule of the affected joint and active mobilization very helpful. Similar methods could be employed usefully in the treatment of recent sprains and of painful scars. He showed two patients who had been treated for sciatic scoliosis. He had found that immobilization of the lumbo-sacral spine in plaster-of-Paris jackets, applied with the patient suspended or bending forwards, gave the most satisfactory results.

Dr. STAERMOSE said that though *coalitio-calcaneo-naviculare* in many people represented no more than a symptomless anatomical anomaly, yet it was occasionally found in association with spasmodic flat-foot. Excision of the bridge between the two bones and the interposition of part of the muscle belly of the extensor brevis digitorum usually resulted in cure of the peroneal spasm. Dr. FOGED demonstrated the results of operations for torticollis. The most universally satisfactory procedure had been open division of both heads of the sterno-mastoid just above the clavicle, followed by a long period of daily stretching and re-education. Dr. CHIEVITZ gave an account of the geographical distribution of tuberculosis in the Danish population, and discussed the relationship between human and bovine types in surgical lesions.

In a brief symposium on osteo-arthritis of the hip Dr. MORVILLE dealt with the classification of this disease from the clinical and radiological standpoints, while Dr. BERNTSEN described his method of drilling ("forage") the femoral neck and head—the procedure described originally by Graber-Duvernay. It was interesting to hear that very considerable relief of pain had followed

this simple operation in over 60 per cent. of his series of patients suffering from osteo-arthritis of the hip.

Dr. THERKELSEN discussed in great detail the indications for and results of "shelf" operations performed in adult life for congenital subluxations of the hip. In contrast with the experience of British surgeons, Dr. Therkelsen had found the operation satisfactory in relieving pain and increasing the stability of the hip.

The visit ended with a tour of the hospital, which conforms with the modern standards of architectural simplicity, having many small wards containing at the most six beds. The British Orthopaedic Association dinner was held at the Restaurant Nimb, and among the guests were the Danish contingent and their ladies. Numerous social functions included tours in and around the city, a reception at the Yacht Club Pavilion by several of the Danish surgeons, and another at the Town Hall by the City Council of Copenhagen. All were keenly enjoyed by the visitors.

Proceedings in Stockholm

In this city two mornings were spent at the new Karolinska Institutets Orthopediska Klinik Vanföreanstalten, where Professor Waldenström and his colleagues and assistants presented a most stimulating programme.

Professor WALDENSTRÖM showed the results of arthroplasties on various joints, and concerning arthroplasties in general said:

"The treatment is, as we all know, difficult. But the difficulty lies not only in carrying out the operation skilfully, but as much in deciding which cases are suitable for operation. It should be undertaken only on the earnest request of the patient, and only after the surgeon has assured himself that the patient will really get more use from a mobile joint than from his present stiff one. We keep all these patients in hospital for some time before making a decision, not only for the purposes of physical examination but also, and still more important, to get an impression of their mentality and their reaction. The post-operative treatment is painful, and the patient must not only submit to passive movements, but he must also carry out energetic active ones many times each day in spite of pain."

Later he presented some of his views on certain hip conditions of which he has made a life-long study. These included coxa plana (pseudo-coxalgia) and coxa magna-valga-luxans. He attributed the latter to a mild local inflammatory process, possibly tuberculous in some patients, which resulted in overgrowth of the femoral head so that it was no longer contained completely within the acetabulum. The relationship between osteo-arthritis and the congenital and youthfully acquired deformations of the femoral head were discussed. Professor Waldenström also performed the operation which has been most successful in his hands for the treatment of recurrent dislocation of the shoulder—namely, the insertion of an autogenous bone graft into a niche along the anterior margin of the glenoid (Eden-Hybbinette operation).

Dr. FRIBERG read a paper on spondylolisthesis, a condition which was being recognized more frequently in Sweden. When it was causing symptoms he advocated fusion of the slipping vertebral body to the spinal segment immediately distal to it through an abdominal transperitoneal approach. He performed his own modification of this operation on a patient during the course of the meeting.

Dr. KNUTSSON gave a brief but detailed account of the radiological findings in sacralization of the fifth lumbar vertebra. He emphasized that symptoms could arise not only from arthritis in the joint between the sacralized transverse process and the sacrum, but also from arthritis in the smaller intervertebral joints of the lower lumbar segments. Dr. Knutsson demonstrated, too, radiographs of many other interesting bone and joint conditions. The very high standard of radiographic achievement in this clinic was commented on by all the visitors.

Dr. SILFVERSKIOLD described the condition known as chondromalacia patellae and its treatment. He regarded it as the commonest form of derangement of the knee, and believed that the cartilage of the patella was the first in the body to undergo degenerative changes. There were crepitations between the patella and femur on movement, associated with attacks of pain and swelling, and peripatellar tenderness. For mild lesions he advised conservative treatment, and for more advanced ones excision of the damaged cartilage in part or in whole, the raw area being covered with a free fascial graft. About seventy patients had been operated on in this way and the majority had perfect function.

Dr. NILSONNE gave an account and showed some of the results of the operative treatment of infantile or congenital coxa vara. He had performed a wedge osteotomy in the trochanteric region on no less than sixty patients suffering from this condition. His best results were in those patients on whom the osteotomy had been done between the ages of 6 and 8. In these cases successive radiographs showed that the femoral neck had reconstructed itself over a number of years until eventually the hip could not be distinguished from the normal either by clinical or *x*-ray examination. This address and demonstration were among the most impressive seen on the Scandinavian visit and excited much appreciative comment.

Other short papers were read: on the rehabilitation of the cripple, by Miss HOJER; on the syndrome of the scalenus anticus and cervical rib, by Dr. WIBERG; on congenital ulnar deviation of the fingers, by Dr. LUNDBLOM; and on the results of the shelf operation for congenital subluxation of the hip in adults, by Dr. SEVERIN.

A COMMEMORATIVE EVENING

The *Medical Officer* was founded in 1908 as a weekly journal for medical men in the Government and municipal services under the editorship of Captain G. S. Elliston, *M.C.*, now Member of Parliament for Blackburn. It has throughout had the support and collaboration of public health officers. Its editor is a son of the late Dr. W. A. Elliston of Ipswich, President of the British Medical Association in 1900, and a brother of Mr. Guy Elliston, who was Financial Secretary and Business Manager of the Association from 1902 until his death in 1918. The *Medical Officer* reached its 1,500th issue a few weeks ago, and in commemoration of this landmark Captain Elliston gave a dinner party at the House of Commons on July 1 to meet the President and Council of the Society of Medical Officers of Health.

The Registration Act, 1837

The host in welcoming his guests said he had chosen a date of great significance to the public health service. On that day one hundred years ago there had come into force the Act for Registration of Births, Marriages, and Deaths, on which the whole structure of our health services had been based. In the hope of finding evidence of the prescience of Parliament he had looked up the contemporary official reports of the debates on the Registration Bill. Unfortunately the speeches of Lord John Russell, Sir Robert Peel, and others gave no indication that legislators could foresee the ultimate effect of their Acts. The only reference to the public health implications of efficient methods of registration occurred in one short paragraph of the report which had prepared the way for the Bill. Happily Dr. William Farr was appointed under the Act as compiler of abstracts in the office of the Registrar-General, and his brilliant reports on the causes of death soon compelled attention. Liverpool led the way by appointing the first M.O.H. in 1847, and in the following year the City of London secured the great John

Simon. The other big towns quickly followed suit, and by 1856 provincial colleagues had founded the Society of Medical Officers of Health. Two years before this Sir John Simon had become the first Government medical officer; then followed the Public Health Act of 1872, which required each of over 1,400 urban and rural district councils to appoint a medical officer of health and a sanitary inspector. Finally in 1888 Lord Salisbury's Act created county councils with county medical officers. Thus, barely fifty years after the passing of the Registration Act the whole country had been covered with the essential staffing for health administration. With the development of these services and the extension from environmental to personal hygiene the creation of the Ministry of Health followed as a natural consequence in 1919.

Captain Elliston coupled his toast to the Society of Medical Officers of Health with the name of the President, Dr. Ernest Ward, who followed with an entertaining speech. Sir Francis Fremantle, M.P., proposed a toast to the *British Medical Journal* and the *Lancet*, coupling with it the names of Dr. N. G. Horner and Dr. Egbert Morland, and paid a tribute to the work and character of the late Sir Squire Sprigge. Sir Henry Brackenbury offered congratulations and thanks to Captain Elliston on behalf of the British Medical Association, which Sir Henry represents on the Council of the Society of Medical Officers of Health. Dr. James Fenton, president-elect of the Society, proposing a toast to Captain Elliston, spoke of the invaluable services he had given to the cause of public health as secretary of the Society for many years, as member of Parliament, and through the *Medical Officer*.

ROCKEFELLER TRAVELLING FELLOWSHIPS

The Medical Research Council has awarded Rockefeller Fellowships to the following for the academic year 1937–8:

Dermid Lockhart Cameron Bingham, M.B., F.R.C.S.Ed., Clinical Tutor, Surgical Out-patient Department, Royal Infirmary, Edinburgh.

Eric George Lapthorne Bywaters, M.B., Assistant Clinical Pathologist, Middlesex Hospital.

Philip Rainsford Evans, B.Sc., M.B., M.R.C.P., Registrar, Medical Diseases of Children, King's College Hospital, London.

John George Sclater, B.Sc., M.B., M.R.C.P.Ed., Tutor in Clinical Medicine, Royal Infirmary, Edinburgh.

Eric Frank Scowen, M.D., M.R.C.P., Assistant Director, Medical Professorial Unit, St. Bartholomew's Hospital, London.

Charles Herbert Stuart-Harris, M.D., M.R.C.P., Sir Henry Royce Research Fellow in Influenza, London.

Graham William Hayward, M.B., M.R.C.P., Resident Medical Officer, National Hospital for Diseases of the Heart, London.

All the Fellows propose to work at centres in the United States. Dr. Stuart-Harris and Dr. Hayward will hold their fellowships under modified conditions, while receiving emoluments from other sources.

In addition, the Rockefeller Foundation has awarded fellowships, on the recommendation of the Medical Research Council, to the following candidates in the special field of psychiatry, neurology, and related subjects:

Edward William Anderson, M.D., M.R.C.P., Medical Director, Cassel Hospital, Penshurst.

Alexander Kennedy, M.D., M.R.C.P., Assistant Medical Officer, Maudsley Hospital, London.

Alan Sutcliffe Kerr, M.B., F.R.C.S., Surgical Registrar, Royal Infirmary, Liverpool.

Denis John Williams, B.Sc., M.D., M.R.C.P., Resident Medical Officer, Hospital for Nervous Diseases, Maida Vale, London.

Alexander Francis Rawdon-Smith, Ph.D., Senior Student, Royal Commissioners for the Exhibition of 1851, working in the Psychological Laboratory, University of Cambridge.

Dr. Anderson proposes to work in Germany, the others at centres in the United States. Dr. Rawdon-Smith will hold his fellowship for six months only.

Reports of Societies

INFLUENCE OF EMOTIONS ON BODILY FUNCTIONS

At a meeting of the Section of Psychiatry of the Royal Society of Medicine on June 29, with Dr. T. A. Ross presiding, Dr. ERICH WITTKOWER of Berlin read a paper on "The Influence of the Emotions on Bodily Functions."

Dr. Wittkower said that the problem of psychosomatic interrelationships could be approached along various paths; his own investigations had been made along two—namely, the study of psychoneurosis linked to organs and the experimental production of psychical alterations and observations of the effect in the physical sphere. He left on one side changes in respiration and in pulse and blood pressure, as these had been considerably investigated by others. A strong emotional disposition reacted on the respiratory organs, even leading to permanent disorders of respiration. As for blood pressure, in pleasurable emotion the blood accumulated in the brain and at the periphery, and in painful emotion in the abdominal organs. His own experimental researches, carried out mainly under hypnosis, had been directed to fluctuations in the size of the heart as seen by *x* rays. The heart in common speech was supposed to be the seat of the emotions; persons were said to be soft-hearted, and cases of "broken heart" were recorded. The wife of one of his colleagues suffered from heart attacks during matrimonial arguments, and on one occasion her husband took an *x*-ray picture of her heart during an argument and found it distinctly smaller than normal. In other persons an enlargement of more than 1 cm. in diameter had been recorded.

Salivary and Gastric Secretion

Changes in salivary secretion, Dr. Wittkower continued, had been found in the particular person to be independent of the type of emotion experienced. Whether the emotions were pleasurable or painful the secretion would be found in one person to increase and in another to diminish. The influence of emotion on gastric secretion had been repeatedly investigated as to changes in acidity and quantity and emptying time of the stomach. Here again different emotions in the same subject always caused uniform changes. One subject to every kind of emotion reacted with hyperacidity, another with hypoacidity, one with a diminution and another with an increase of secretion. The form of reaction seemed to be typologically determined. He had come across certain cases in which there was a family tendency to diarrhoea on the occurrence of any nervous upset. He showed a family tree of twenty-eight persons of whom six suffered from "emotional diarrhoea." He mentioned another case in which an intense gastroptosis disappeared under psychological treatment (the case turned upon the rectification of a sexual difficulty).

Most emotions had a stimulating effect on bile secretion, but during annoyance the flow of bile was inhibited. He had an impression that the bile produced during joyous emotion was specially light in colour. Psychological factors might perhaps assist the onset of jaundice and even of gall-stones.

Urine Secretion

In some of the subjects examined under hypnosis no changes in the composition of the urine could be found in spite of strong emotion being provoked. In subjects in whom changes occurred these generally related most distinctly to quantity, total nitrogen content, and content of uric acid. In some cases a remarkable uric acid storage seemed to take place. A glance at an excited

person suggested a faint reflection of some of the signs seen in Graves's disease—protrusion of the eyes, palpitation, perspiration, and tremors. That the basal metabolism rose during emotion had been well shown, and a rise of blood-iodine content to values such as otherwise were only known in Graves's disease had been recorded.

Finally Dr. Wittkower described an attempt to make use of the psychogalvanic phenomenon in the affect-psychology of the healthy and of neurotics. This short review of the influence of emotions on bodily processes was bound to be incomplete. Emotion caused or was accompanied by a real disturbance of every bodily function, and emotional stress might therefore lead to serious disturbances and eventually to definite organic changes.

General Discussion

Dr. T. A. ROSS, from the chair, said that again and again patients were sent to the psychiatrist with the statement that, among other things, they were suffering from high blood pressure, but in fact on careful examination such high pressure was seldom found. The truth was that the doctor undertaking the first examination had upset the patient, leaving him in a state of doubt about certain things, and in that condition had taken his blood pressure, and inwardly thanked God that at last he had found a physical sign! It was interesting to learn that the reaction of the saliva and of the gastric secretion was the same for the individual—different for different individuals but not for different emotions in the same individual. If the history of these people were investigated it might be found that the direction of the reaction depended upon some accidental circumstance the first time it took place, and thereafter a repetition of any emotion caused the same type of phenomena to appear. The effect on the stomach had been a matter of age-long controversy. There were those who maintained that most indigestions were emotional; and, considering how many people were comparatively easily cured of dyspepsia by psychotherapy, it looked as if in large numbers of people dyspepsia was a neurosis. Some German work, based on *x*-ray observation, had contradicted this view, and had upheld the idea that the condition was a form of gastritis, but he noted that Alvarez, gastrologist to the Mayo Clinic, who began as a strong organistic physician, now said quite definitely that after twenty or thirty years of observation on the stomach he had come to the conclusion that cholecystitis was the commonest organic cause of dyspepsia, but that the commonest of all causes of dyspepsia was neurosis. Finally the speaker reminded his audience of the significant description in the Fifth Voyage of Sinbad the Sailor, how, when the ship on which he sailed was dashed to pieces, "the captain fell on the deck and tore his beard and his hair, and his gall-bladder was swollen with rage and with mortification"!

Dr. C. P. BLACKER asked how many patients were used by Dr. Wittkower in these experiments, whether they were selected as being patients in hospital or students or friends of the investigators, and what precautions were taken to ensure that they were normal members of the population. How were the emotions induced under hypnosis? Had he any standard technique for producing them? Did he detect any significant difference in the reactions of the patients according to age or sex? Dr. TRAVERS SMITH was surprised at the finding that the individual reacted in much the same way to different types of emotional stimulus. Might that be accounted for by the fact that anxiety was common to so many emotions? It would be interesting to know how far the experiment itself caused the emotion.

Professor DAVID SLIGHT pointed out some of the difficulties in such experiments—for example, the difficulty of getting adequate measures of registration, the difficulty of getting adequate controls, and the difficulty of inducing specific emotions experimentally. In some experiments in which he was concerned ten or eleven years ago in endeavouring to see how the effect of emotion could be recorded on the electrocardiogram he and those working with him had to confess that they could get very few changes at all. Their results were negative. As for the usefulness of the psychogalvanic phenomenon, this reflex or skin response was certainly an index of change in the emotional system, but unfortunately it was almost too sensitive, and his own results in this field had been very limited.

Dr. WILLIAM HEWETSON suggested that the greater prevalence of gastric ulcer at the present time was due to excessive worry and excessive use of tobacco. It was the long-distance effects which should be studied. Dr. RALPH NOBLE asked whether the opener had observed any relationship between emotional phenomena and blood disorders, even to the extent of pernicious anaemia. Recently he had seen a number of cases of neurotic patients who were suffering from that condition. Dr. D. N. HARDCASTLE had noticed that in the family tree shown by Dr. Wittkower the six persons who suffered from "emotional diarrhoea" were all females. Was there any difference between the sexes in this respect?

Dr. GERALD RUDOLF referred to certain cases some years ago in which he had injected adrenaline in large doses, and it was a common finding that from seven to fifteen minutes after the adrenaline had been used under the skin a sensation of fear developed. He thought there might be a link between the *p*H of the blood and the excessive secretion in the stomach. Dr. CLEMENT CHESTERMAN said that he had been working among the primitive Bantus in Africa, where emotions were quickly extc iorized. Among these people gastric or duodenal ulcer was extremely rare, and he had never come across a case of Graves's disease except in people who had had syphilis and suffered from hypertension. He had diagnosed one or two cases of diabetes which one was tempted to believe had some relation to an unstable nervous system.

Dr. LETITIA FAIRFIELD had noticed in a certain class of persons a difference in the incidence of nervous breakdown as between the sexes. Both male and female in a certain occupation were subjected to very much the same emotional strain, but breakdowns among the women of this class were very much more common, and it was suggested that the reason was that the men, when annoyed, could discharge their nervous energy by violent language or act, whereas convention forbade such a recourse in the case of the women. She wondered whether Dr. Wittkower had made any observations on a condition closely connected with neurosis—namely, hyperemesis gravidarum. Nowadays one never heard of neurosis in this connexion, but only of albuminuria and other disturbances of pregnancy. Might not the pendulum have swung too far?

Dr. MARGARET LOWENFELD said that it was very striking to note how frequently certain organic conditions in children were associated with extreme inhibition of emotion, but when, on treatment, emotion was released the physical symptoms diminished. She recalled a boy who, according to his mother, had never passed a solid motion. This intense fluidity of the intestinal contents was found to be associated with fear—a very mixed and confused fear in his own mind, of a sexual character. Without the use of any drugs or change of diet the release of the emotion and its expression in certain tangible forms was accompanied *pari passu* with a solidification of the bowel content. Another child had persistent constipation; this was a very shy and timid child, and well-directed psychological treatment, the encouragement of a frank expression, and direct discharge of emotion resulted in the steady clearing up of the condition. Another child of 5 had had an almost uninterrupted stay in hospital with one infectious disease after another, with intervals of bronchitis and dyspepsia. The child was thin, debilitated, completely inhibited, suggestive of a moron, but after a period of play treatment for eighteen months

she had attained normality in weight, general appearance, and expression.

Dr. WITTKOWER, in reply, said that his experiments had been carried out over a period of ten years, and of course the subjects were changed from time to time. The subjects were either patients who had been successfully treated or they were students. It was quite easy to produce emotions under hypnosis. Knowing the history of these people he could produce a specific effect of joy or grief. A considerable increase in the leucocyte count was found under emotional influence. He had had no experience of hyperemesis gravidarum, and in this and in other respects he was fully aware that his findings were incomplete, but he would have the opportunity to continue his studies at the Tavistock Clinic.

BLACKWATER FEVER

A meeting of the Royal Society of Tropical Medicine and Hygiene was held at Manson House on June 17, with the new president, Colonel S. P. JAMES, F.R.S., in the chair. A conjoint paper on blackwater fever in Macedonia was presented by Mr. HENRY FOY and Dr. A. KONDI, and this was followed by one by Dr. N. HAMILTON FAIRLEY and Mr. R. J. BROMFIELD on pseudo-methaemoglobin in blackwater fever and its clinical significance.

Blackwater Fever in Macedonia

Mr. Henry Foy stated that during five years' work in Greece he and Dr. A. Kondi had investigated some 450 cases of blackwater fever in the laboratory. These cases were drawn from the Refugee and Municipal Hospitals in Salonika, the villages and towns in the Plains of Drama and Chrysoupolis, and from Northern Peloponnesus. The disease was particularly prevalent in the Vardar plain and the Struma valleys. When it was remembered that probably not more than 20 to 25 per cent. of cases reached hospital, the magnitude of the problem was evident. From 1923 to 1935 the average monthly admissions of malaria had been 1,779, and for blackwater fever 58.7. Blackwater fever was most frequent from September to January. The two-monthly lag that had already been observed by other workers was present in Macedonia, for the peak of blackwater fever appeared in November, and that for malaria in September and October. Throughout the period the percentage of malaria that was blackwater averaged 3.297. The low incidence of blackwater fever and malaria in 1923 and 1924 was no doubt related to the immigration of large numbers of non-immune refugees from Asia Minor in those years.

As a result of mathematical analysis of the available data, Mr. Foy said, it was perfectly clear from their regression equation that (1) the number of blackwater fever cases in any one year was quite independent of the number of malaria cases either in the previous year or the previous two years; (2) in a population that had already been exposed to malaria for one or two years the number of cases of blackwater fever was significantly correlated with the number of malaria cases of the same year; (3) this correlation did not appear to hold in an unsensitized population, no matter how severe the malaria. Another point which emerged from their figures was that the susceptibility of the population of Macedonia to blackwater fever had been increasing with time, although somewhat irregularly, and that it was gradually working towards an upper asymptote, when the "blackwater-producing capacity" of malaria would become stable. Regarding the parasite rate in blackwater, they had found approximately 40 per cent. of their cases positive, taking as their criterion any case showing parasites up to within fifteen days after the first passage of black urine. The rate was no doubt low on account of the large number of cases that took quinine just before the attack. The positives among 360 cases were 47 per cent. *Plasmodium falciparum* and 33 per cent. *P. vivax*; the remaining 20 per cent. were either quartan or mixed. Ruling out quartan as a producer of blackwater fever and compensating for the improved diagnosis of subtertian malaria, their figures indicated that *P. vivax* and *P. falciparum* were both producers of blackwater fever, and that, contrary to accepted teaching, *P. vivax* was the more potent. This conclusion was consistent both with the regression coefficients which they had found and with the actual parasite rate.

Pseudo-methaemoglobin in Blackwater Fever

Dr. Hamilton Fairley said that in 1934, in conjunction with Mr. R. J. Bromfield, he had described a new blood pigment encountered in the plasma of a severe case of blackwater fever in London, and that a year later they had demonstrated it in another similar case. In November, 1936, under a grant from the London School of Hygiene and Tropical Medicine, they went to Salonika, where Mr. Henry Foy generously afforded them laboratory and clinical facilities for the investigation of this problem. Some twenty-five cases of blackwater fever were personally investigated in hospitals in Salonika and adjacent villages during a period of six weeks, which illustrated the unique potentialities in Macedonia for the study of this disease.

As a routine procedure the plasma and urine were examined on a Hartridge spectroscope set against artificially produced methaemoglobin, and the effects of treatment with Stokes's reagent, ammonium sulphide (10 per cent.), and hydrogen peroxide (10 vols.) were noted. All these reagents dispersed the α band of true methaemoglobin, but not that of the new pigment. In special cases the effect of treatment with sodium hydrosulphite was also determined.

Fourteen cases were investigated in detail. The plasma contained oxyhaemoglobin alone in two mild cases, new pigment alone in two severe cases seen on the third and sixth days respectively, and new pigment and oxyhaemoglobin in the remaining ten. In not a single instance was methaemoglobin demonstrated. From these findings it was evident that all previous workers who had described methaemoglobinaemia in blackwater had really been observing the new pigment, for which the name pseudo-methaemoglobin was now suggested. The urine, on the other hand, never contained pseudo-methaemoglobin in demonstrable quantity. Oxyhaemoglobin was found alone in two instances, and in association with methaemoglobin in ten others; in the two remaining cases the urine contained no blood pigments, though pseudo-methaemoglobin was in the plasma. All available data indicated that, unlike oxyhaemoglobin, the new pigment was a non-threshold substance for the kidney, and that urinary methaemoglobin was derived from oxyhaemoglobin only during or after its passage through the tubules.

The formation of methaemoglobin in sterile blood or haemoglobin solution stored under ordinary conditions or after incubation at 37°–55° C. had long been recognized. To ascertain whether the new pigment could be produced *in vitro*, 4 vols. of sterile plasma from blackwater fever patients were incubated at 37°–40° C. for forty-eight hours with 1 vol. of a concentrated solution of haemoglobin prepared under aseptic conditions from laked corpuscles. Pseudo-methaemoglobin was invariably produced. But, contrary to expectations, when normal plasma was used as a control the new pigment and not methaemoglobin appeared. Pseudo-methaemoglobin was also formed when a solution of artificially prepared methaemoglobin or sulphaemoglobin was incubated with plasma at 37°–40° C. for forty-eight hours. On incubating a solution of oxyhaemoglobin alone, methaemoglobin was invariably formed. These experiments proved that plasma had the power of converting extracorpuscular haemoglobin, methaemoglobin, or sulphaemoglobin into the new pigment when incubated under appropriate conditions.

Pseudo-methaemoglobin contained trivalent iron, and, like methaemoglobin, could not function as a respiratory pigment. It produced a brown-coloured plasma, but was never found within the corpuscles and did not appear in the urine in demonstrable quantity. Its production from extracorpuscular circulating oxyhaemoglobin was a conservative action on the part of the body, since the kidneys were protected from the blockage of the tubules which resulted from the elimination of oxyhaemoglobin in acid

urine. Its formation appeared to be the first stage in a process by which the body disposed of circulating extracorpuscular pigment, and the formation of pseudo-methaemoglobin might be anticipated in any intravascular haemolysis of sufficient magnitude and duration. Since 1864, when Hoppe-Seyler first described methaemoglobin, this pigment had escaped recognition through being consistently confused with methaemoglobin. For this reason the name "pseudo-methaemoglobin" appeared a not inappropriate one.

Discussion

Sir RICKARD CHRISTOPHERS said that both papers broke much new ground. The remarkable figures which Mr. Foy presented regarding the monthly incidence of the disease in Macedonia made this an ideal place to investigate the blackwater fever problem. The new pigment must be of considerable practical importance, and it was of special interest in blackwater as its presence and spectroscopic insensitiveness accounted for the underestimation by previous workers of the total amount of blood destroyed. It, however, threw no new light on the cause of the haemolysis. To the European blackwater fever was the most important of tropical diseases. It gave to Africa the name of "the white man's grave," and prevented the colonization of new areas and many commercial and economic projects.

Professor WARRINGTON YORKE pointed out that the death rate from blackwater fever in Rhodesia had shown no improvement since 1900. Dr. Fairley had explained that evening something which had been very puzzling to himself and all other workers—namely, why the oxyhaemoglobin in the plasma was so small in amount. The speaker had proved that only 10 per cent. of the blood destroyed was eliminated through the kidneys. This, according to Dr. Fairley, was due to the transformation of oxyhaemoglobin into pseudo-methaemoglobin, which was not secreted by the kidney. In other diseases, like babesia, there was much more free oxyhaemoglobin in the plasma than in blackwater fever, and he wondered whether previous hypertrophy of the reticulo-endothelial system might account for the discrepancy. In association with Norris he had also produced evidence that oxyhaemoglobin was secreted by the tubules rather than as a transudate through the glomeruli. He agreed with everything Sir Rickard Christophers had said regarding the importance of blackwater fever in the Tropics, and hoped that every encouragement would be given to Dr. Fairley and Mr. Foy to prosecute their studies in Macedonia.

Professor DE KOCH discussed the allied problem of epizootic icterus in sheep in South Africa. The aetiology was obscure, but the disease was associated with methaemoglobinuria and great blood destruction. Peculiar pigment reticulum cells were found in different organs, and the liver contained a higher percentage of copper than normal. Dr. C. C. CHESTERMAN asked Mr. Foy if quartan malaria in some way gave immunity to blackwater, and whether in his cases of *P. vivax* infection he was not dealing with mixed infections. Major J. S. K. BOYD stated that in his experience in Macedonia during the war every case among the British troops was potentially one of mixed infection. Although one species might be demonstrable in the blood at the time of haemoglobinuria, both parasites had at some time been present.

In reply, Mr. FOY said he could not explain the absence of quartan parasites, but the findings were equally negative whether splenic smears or peripheral blood were examined. Their experience had been that before the onset of blackwater fever the spleen was not loaded with malaria parasites. The parasite rate itself was of little significance in blackwater since it depended on the time and amount of quinine taken prior to onset, the degree of haemolysis as measured by red cell counts, and the interval between the onset of haemoglobinuria and collecting the blood.

Dr. HAMILTON FAIRLEY, in reply, stated that pseudo-methaemoglobin had nothing whatever to do with the fundamental cause of haemolysis in blackwater fever, though it did throw light on subsequent events once haemolysis started. He did not share Professor Yorke's pessimism that nothing could be done therapeutically in blackwater fever. Their clinical and pathological studies in London and Macedonia revealed two types of patient: one dying of anaemia with polyuria and adequately functioning kidneys, the other succumbing to anuria and uraemia. The former could be saved by multiple blood transfusions. Alkalization of the urine was a rational procedure, and the work on pseudo-methaemoglobinaemia entirely supported the experimental findings of Baker and Dodds that methaemoglobin was produced in the tubules, and that there was less "silting-up" effect in the presence of an alkaline urine. In incompatible blood transfusion a pigment occurred with an alpha band in the red spectrum resembling that of methaemoglobin. As a result of *in vitro* experiments he predicted that this pigment would prove to be pseudo-methaemoglobin.

Local News

ENGLAND AND WALES

Medical Art Society

This year's exhibition of the Medical Art Society, held at the Royal Society of Medicine, 1, Wimpole Street, is one more example of the versatility of the medical profession. The general level of the work is very high, but on the whole the water-colours are perhaps the most successful. "Farm Track, Breconshire," by J. F. Robinson, is a very pleasing snow picture, and "A Study of Trees" by the same artist also well repays study. John Hay shows great ability in handling colour and design in "The Cheviots, near Wooler" in oil, and "The Copper Beech" and "St. Ives" in water-colour. "The Chalk Bank" by Charles Pannett is pure in colour and good in drawing and design. R. Hallam shows three lively and amusing sepia sketches: "The Orchestra," "Flower Sellers," and "The Discussion." The pencil sketch "The Lone Tree in Norway" by Humphrey Neame is delicate and decorative. Among many other charming water-colours are "Marram Hills, Norfolk" by E. B. Waggett, "Morston Staithe" by Henry Wilson, "Railroad, New Forest" by Dorothy Hare, "Straits of Messina from Taormina" and "Bou Sada, Algeria" by R. Foster Moore, and "Allotments in Winter" by H. B. Maitland. "Sable Antelope" (tempera) by A. C. Dalzell is a good piece of design. We see here in this exhibition further proof of the versatility of the late Sir Squire Sprigge in his four charming water-colours "Golden Spring," "The Pond," "New Forest Trees," and "Mountain Spring near Bad Gastein." Among the oil paintings "Ship in Distress, Tintagel" is a wonderful representation by A. S. Cobbledick of a storm off the coast of Cornwall. Special attention should also be drawn to the two pictures painted at Walberswick by John Rammell; to "Punta Espada, Pyrenees, Cataluna" by John Rammell; to "Reflected Ramparts, Marra Kech" and "An Olive Grove" by Helena Wright; to "Kingston Harbour, Jamaica" by Leonard Colebrook; and to the "Landscape with Figures" and "Old Village Road, Belgium" by Allan Beale Hewlett. There are also several successful portraits by A. S. Cobbledick, H. Elliott Blake, R. V. B. Emmons, and H. B. Maitland. Among the flower paintings are two delightful screens by Sir Leonard Hill; Emanuel Miller's "Flower Piece" is very successful, and so are the chrysanthemums by W. Wilson and the Christmas roses by Cuthbert Lockyer. There is also some interesting sculpture; the standing figure by L. Spira is virile and

well balanced, and the plaster casts "Rest" and "The Diver" by E. S. Tait are rhythmical and pleasing. The flower studies by Arthur Edmunds in silver filigree and enamel are most decorative. The exhibition will remain open each day (Saturdays excepted) from 12 noon to 6.30 p.m. until July 14. Admission is free without ticket.

University of Durham Centenary

The centenary celebrations of the University of Durham, postponed from 1932, were held last week at Durham and Newcastle-upon-Tyne. Former students from various parts of the country spent the morning of Thursday, July 1, in visiting the Castle and the College at Durham, and at noon attended a service in the Cathedral, at which the Bishop, Dr. Hensley Henson, was the preacher. In the afternoon the honorary degree of D.C.L. was conferred by the Chancellor, Lord Londonderry, on a number of distinguished men, including Sir Cuthbert Wallace, Bt., President of the Royal College of Surgeons of England. Luncheon parties were held in the great hall of University College, with the Vice-Chancellor, Sir Robert Bolam, in the chair, and at the Town Hall, where Lord Londonderry took the chair as Mayor of Durham. On Friday, July 2, the celebrations were continued in Newcastle at the College of Medicine and Armstrong College.

St. Mary's Hospitals, Manchester

In the report for 1935 of the maternity department of St. Mary's Hospitals, Manchester, Dr. E. A. Gerrard analyses 3,294 cases attended during the year. In-patients numbered 2,374, and 920 patients were delivered in their own homes. There were thirty-one maternal deaths, eight in "booked" cases and twenty-three among the emergency cases, representing a mortality of 0.76 per cent. of the total in-patients, while the mortality in all "booked" deliveries, including the "district" cases, was 0.4 per cent. The morbidity rate, estimated by the British Medical Association standard, was 5.9 in "booked" cases and 7.6 in emergencies. Of the 157 cases showing puerperal morbidity, forty-three had Caesarean section and thirty-eight had normal labours. The cause of the morbidity was puerperal sepsis in no less than 101 of these cases. The maternal mortality in 112 breech deliveries was 1.6 per cent. and the foetal mortality was 41 per cent. Corresponding figures for sixty-two cases of placenta praevia were 6.3 and 33.8 per cent. Of 234 cases of abortion, the process was incomplete in 102, inevitable in seventy-seven, and therapeutic in forty-four. In these last cases abortion was induced on account of phthisis in thirteen cases and cardiac insufficiency in seven. Classical Caesarean section was performed in sixty-five cases, and the lower segment operation in seventy-seven cases.

One of the aims of the British Health Resorts Association is to make more widely known the medical climatology of British coast resorts, and in pursuance of this aim a special chapter on climatology by a recognized expert is included in the latest (1937) edition of *British Health Resorts*, the association's handbook. In reply to questionaries issued in 1935 and 1936 the Association has collected some interesting reports on the "invalids winter" on the coast, and from these a valuable analysis of the atmospheric conditions from month to month has been prepared. The handbook also includes a synopsis of the attractions afforded by British resorts during the "invalids winter." To the section dealing with health resorts in the Dominions and Colonies has been added information concerning the island of Cyprus. The whole of the material has been carefully revised by an expert subcommittee of the association. Altogether a most valuable handbook which no medical man can afford to be without.

Correspondence

Tubo-uterine Implantation for Sterility

SIR,—I have read with interest Mr. Green-Armytage's excellent paper in the *Journal* of July 3 (p. 6) on tubo-ovarian implantation, and I thank him for his handsome reference to my work.

I began to do the operation in 1921, and naturally have changed my technique from time to time since then. Latterly I have adopted a method which, I think, renders the passage of silkworm gut down the implanted tubes unnecessary. It has been urged against tubo-uterine implantation that the new internal ostia do not remain patent, and, having regard to the small calibre of the isthmic segments, it is obvious that very little would be required to close them. The placing of strands of silkworm gut in the implanted tubes is done to prevent this. The ampullary segments of the tubes, on the other hand, have a much larger calibre, and post-operative closure of the new internal ostia is much less likely if, after cutting away the whole of the isthmic segments, these segments be implanted. This is what I have been doing for some time now.

It raises the question, For what purpose does Nature form the isthmic segments? Why do the ova have to traverse such long and narrow passages? It may be suggested that the purpose is to delay the entry of the fertilized egg-cell into the uterus until the capsule that envelops the early cell divisions has disappeared and the cell mass is free to attack the surface of the endometrium. If this was so, then an egg-cell that entered the uterus too soon after fertilization would fail to graft. The many recorded cases in which intra-uterine pregnancy has occurred after removal of both tubes down to the uterine cornua directly negative this, while primary ovarian gestation shows that for the purpose of pregnancy it is not necessary for the egg-cell to traverse the tube at all. It is believed that ordinarily the sperm blends with the egg-cell in the tube. Whether blending ever occurs in the uterus, or, occurring there, is followed by grafting, is unknown; but the cases to which I have referred suggest that it may very well happen.

Of the various causes that bring about blockage of the tubes there is one that is of particular importance in this connexion—namely, congenital impatency. These cases are far from uncommon, and in most of them (but not all) the uterus is smaller than normal. It is often described as "infantile," and the patient's sterility is ascribed to her small uterus—the fact being forgotten that pregnancy can occur in the far smaller Fallopian tube. The real cause of the sterility in these cases is a congenital lack of patency of the tubes, which an operation reveals to extend along the whole length of the abnormally thin isthmic segments. In such patients the surgeon *has* to implant the ampullae, as he also has to do in those cases in which a previous salpingitis has produced the same condition.—I am, etc.,

London, W.1, July 3. VICTOR BONNEY.

Present-day Methods of Sterilizing Dressings

SIR,—Dr. M. J. Oliver, in his letter published in the *Journal* of May 22 (p. 1089), confirms my opinion that the process of dressing sterilization leaves much to be desired. My impression is that manufacturers are aware of the facts and literature quoted by Dr. Oliver. They

lay great stress on the preliminary expulsion of air before exposing the dressings to steam, and presumably design sterilizers accordingly. The Grampian Engineering Co., Stirling, issue an interesting booklet containing the conclusions of most of the workers mentioned by Dr. Oliver.

My experiments were conducted on sterilizers of first-class make, with the object of proving their efficiency according to a bacteriological standard, which may possibly be regarded as too high, and when using them in accordance with the manufacturers' instructions. After verbal conversation with the manufacturers, and after reading their literature, I accepted the fact that all air was expelled providing the instructions were followed. Five sterilizers were tested by control tubes and were found to be inefficient. Four were tested with the electric control, and only one—of Indian manufacture—was found to be efficient. (Group IV Exp. Vacuum Hospital B.) The publication of all the experiments was curtailed owing to lack of space.

If it is accepted that the discrepancies in these experiments and in those of other observers are due to air contained in the dressings, it is clear that: (1) either the sterilizers tested are inefficient or the working instructions are incorrect; (2) my statement that the electric control provides absolute safety is incorrect, as under the above conditions it could only indicate when the temperature reaches 115° C.; (3) the conclusions to be drawn from the experiments made are worse than at first thought. As dressing sterilization is carried out in a closed machine, and as there are so many pitfalls in the technique, I suggest that it is logical to ask for proof that the contained air in dressings is driven off, and that steam penetrates through the contents of the dressing containers. Until this is done we cannot accept the process as satisfactory.

Dr. Oliver points out an error in my statement "dry, saturated, or moist steam." Through an error in typing commas have been inserted after "dry" and "saturated." —I am, etc.,

S. N. HAYES,
Major, I.M.S.

Kashmir, June 18.

The History of Surgery

SIR,—Although it is as true to-day as in 1894, as Osler then stated, that "we are even impatient of those who would recall the past and would insist upon the importance of its recognition as a factor in our lives, impatient as we are of everything save the present with its prospects, the future with its possibilities," it is equally true that "in a continual remembrance of a glorious past, individuals and nations find their noblest inspiration." It is perturbing, therefore, to one who is an examiner in several universities to find that many candidates for degrees in surgery lack the barest knowledge of those members of the mighty dead who have made the great contributions to their subject. Candidates who successfully ligature the femoral artery in Hunter's canal when called upon to do so, and who show an accurate knowledge of the surgical anatomy, not infrequently lack all knowledge of who Hunter was, and, incredible though it may seem, I have even met students to whom Lister's name was a blank. The sad thing is that to such men there can be little or no romance in their subject. The fault appears to lie early on in the student's career. In the amassing of a wealth of detailed knowledge of anatomy and physiology and related subjects he may well lack the time and energy to pursue independent investigations as to what manner of men were the contributors whose names are mentioned in his textbooks. The foramen of Magendie, Poupart's ligament, the bundle of Vicq d'Azyr, are to him a foramen, a ligament, and a strand of nerve fibres respectively.

> "A primrose by a river's brim,
> A yellow primrose was to him,
> And it was nothing more."

If, however, the writers of his early textbooks would only publish, however briefly, a few small-type footnotes referring where they appear in the text to the men whose names are household words, the student would, I believe, be helped not only by the addition of some human interest to what may possibly be dry-as-dust material, but also by the production of an association of ideas which would assist his memory of detail.—I am, etc.,

LAMBERT ROGERS.

Cardiff, July 1.

Technique in Knee-joint Operations

SIR,—It would be nice to know whether skin towels are a shibboleth or a sheet-anchor. Perhaps the question is best viewed from three aspects: (1) their efficacy in preventing inoculation of the subcutaneous fat with subepithelial organisms; (2) their efficacy in preventing contact between gloves, instruments, and suture material with the skin surrounding the operation-wound; (3) the duration of surface sterilization resulting from preparatory dressings.

In a previous communication I suggested that they were not only useless but positively dangerous, inasmuch as they rapidly become damp and smear organisms into the deeper parts of the wound. I advocated as a substitute the antiseptic method which I learned from Mr. Naughton Dunn, and which he still practises, according to his letter in the *Journal* of July 3 (p. 34). The second aspect presumably depends on the duration of the operation, the permeability of the skin towels, the dexterity of the operator, as well as on the particular method of preparation used for the skin. The third point has probably been investigated, but I have no references.

There are two ways in which the question might be settled: (1) by comparison of operative results done by different methods (Cotton's "end-result idea"—see preface to his book, *The Shoulder*—points the way, but in our present unenlightened state we have no figures); (2) by experimental bacteriological work carried out during routine operations under different conditions.

Mr. Blundell Bankart, in your issue of June 12 (p. 1227), does not follow either method, but presents his opinions as facts. He assumes that stitch abscess must always be due to infected catgut, and that the infection occurs from the skin. I submit that both these are unproved, since catgut can be infected in many ways and a sterile abscess may even result from over-hardened suture material. His second assumption—that because I advocate a different technique I must therefore get more stitch abscesses than he does—is charmingly uncharitable. Surely one may give a list of post-operative complications without having one or all of them wished off upon oneself?

I fear that until such time as the "end-result idea" becomes something more than an idea, or until the bacteriologists do some fresh work on this subject, we shall continue to confuse our shibboleths and sheet-anchors.—I am, etc.,

ERIC I. LLOYD.

London, W.1, July 2

Treatment of Rheumatic Conditions

SIR,—From the physiological point of view it is, I think, likely that the movements of stiff and painful joints carried out by the patients themselves but guided by skilled nurses are of more benefit than massage when given after treatment by heat, light, or electricity. A great deal of time and labour can be saved by substituting exercises for massage. The greater benefit of exercises is attested to by a colleague experienced for many years in treatment of rheumatic cases by methods of physical medicine.—I am, etc.,

St. John Clinic and Institute of Physical Medicine, June 30. LEONARD HILL.

Prevention of Constipation

SIR,—I am surprised that the correspondence on the prevention of constipation has not produced any reference to the early initiation of the human body into the pernicious practice of purgation. My own thoughts on the subject were crystallized by an admirable monograph by Dr. L. G. Housden—*The Breast-Fed Baby in General Practice*—a Sir Charles Hastings Prize winner.

Almost every breast-fed baby causes concern during its first few months of existence on account of "constipation"—that is, infrequent bowel motions. The absence of residue in its diet and the frequency of slight underfeeding lead the child to empty its bowel at widely spaced intervals, especially in these days of zealous regimentation, when infants are fed on calories, minutes, and ounces.

When I am told that a healthy breast-fed baby is "constipated" I ask whether the motion is hard or normal. If it is hard I know that purgatives have already been given. If it is normal I explain to the mother that the baby is not constipated, and warn her against any interference with the natural bowel function such as is certain to be urged by her friends. I have many records now of babies who have for a time, often extending up to weaning, had their bowels moved even at such infrequent intervals as a week, and not one has ever had constipation or subsequently developed it. Many of these children have never had a purgative in their lives, and the maternal pride when weaning brings three motions a day is gratifying if amusing. Often the crying of a slightly underfed baby is attributed to the infrequency of the bowel evacuation; purgation follows, and depletes it still further. In an effort to retain its fluids the body extracts more water from the intestine, and true constipation results, and is followed by further purgation.

The old practice of giving babies castor oil even on such flimsy pretexts as to get rid of the meconium is dying out, but there are still attendants who derive great "kudos" from curing icterus neonatorum by means of grey powder. Indeed, almost any excuse to give a purgative is seized, and life-long addiction may result.

The healthy breast-fed baby whose bowels move once a week needs an occasional drink of water and nothing more.—I am, etc.,

Newcastle-upon-Tyne, June 27. FRANK STABLER.

Toxic Focus with Ophthalmic and Dermic Reactions

SIR,—Trying to find an elusive toxic focus is so often tedious and unfruitful, despite the greatest perseverance, that some of your readers may be interested by an account of a successful case in which there were two types of reaction—ophthalmic and dermic. Probably in many of the unsuccessful searches investigations are started when the original focus has already cleared up, though the results of the damage done elsewhere are still evident.

A married woman, aged 32, was first seen by me in June, 1936. In 1911 she had had scarlet fever; in 1919 and in 1926 erythema nodosum of both legs; in 1926 psoriasis on the back, arms, knees, and scalp, which resisted treatment; and in 1932 episcleritis in the right eye.

When I first saw her I found her to be suffering from episcleritis in both eyes and psoriasis on her back, arms, knees, and scalp. She appeared to be in good general health. The episcleritis responded to treatment and cleared up, but at the end of September she developed a fresh attack in the right eye, which improved under treatment before relapsing and developing into scleritis with iritis.

By the middle of October iridocyclitis supervened with a profuse keratitis punctata. These cleared up but left an area of sclerosing keratitis, with vascularization at the corneal margin. During this time she had a slight scleral inflammation of the left eye which responded to treatment and was cured within a few days. Taking into account the history, the prognosis was grave, and serious loss of vision might be anticipated ultimately unless the active focus could be definitely found. All investigations had proved fruitless; the Wassermann reaction was negative.

The condition of the teeth and gums did not arouse suspicion. She had recently attended a dentist, but a further dental opinion suggested that some of the teeth which showed a mild chronic condition might be worth investigation. A tooth was extracted and a culture made from the root and socket. This showed a profuse growth of *Streptococcus viridans*. As part of the routine treatment an autogenous vaccine was given. Further extractions were done; the teeth exhibited apical infection.

No further inflammatory reaction has since occurred in either eye, and the corneal opacities resulting from the sclerosing keratitis are fading. Vision is now full (6/5) in each eye.

The patient has put on weight, and looks very well. The skin conditions, which previously had run a chronic course resisting treatment, are now showing very satisfactory progressive improvement. I feel that sufficient time has elapsed for us to assume that the cause of her troubles was located and eradicated. I am indebted to Dr. Hardy Kingston and to Mr. Jacobs for their help in this case.—I am, etc.,

Bristol, June 30. J. EDWARD MARTIN, Honorary Surgeon, Bristol Eye Dispensary.

Ionization for Hay Fever

SIR,—In the correspondence on this treatment two subjects have been discussed: hay fever, which is seasonal, and paroxysmal rhinorrhoea, which is not. In the former allergy plays the major part; in the latter a less obvious one. For hay fever I have abandoned desensitization for zinc ionization by Mr. Philip Franklin's method. It is simpler, less costly, and more effectual, but it requires meticulous care in application. I have had few failures, and have rarely had to give more than one treatment during the season. But in addition it is always worth while to stop milk during the season and to give calcium gluconate or lactate. Some fibrinous exudate is troublesome for the first few days after treatment, but it is probably this and weakened ciliary action that explains the benefit, the entry of pollen protein into the blood being lessened or prevented. At all events the rhinorrhoea diminishes or disappears, though the eosinophilia may remain high. American writers have imputed permanent ciliary damage to ionization. Such damage I have not seen, though it may conceivably happen from over-treatment. The nose of a doctor treated success-

fully last year was quite normal when he returned for treatment before the beginning of this season.

For paroxysmal rhinorrhoea ionization is mostly futile and the cautery often harmful. The late Dr. Arthur Hutchison of Brighton many years ago sent me a relative, aged about 50, who had been troubled with paroxysmal rhinorrhoea for the great part of her life and had had cauterization and other treatment from himself and colleagues in London. The condition promptly cleared on her taking calcium gluconate. One form of this affection is on the increase since the present vogue of *raw* milk for school children began. This "milk rhinorrhoea" promptly stops with stopping of the milk, and will not stop otherwise. This I have proved over and over again, and it can be verified by anyone who tries it. Whether this is a form of allergy I am not here going to discuss, beyond repeating what I have often said: that while milk is *the* food for babes man is the only animal that takes it after weaning, and that, although it contains no histidine, it is apt, as Koessler and Hanke showed, to promote the formation of histamine in the intestine provided certain coliform bacilli and an acid locus are also present.

Most cases of paroxysmal rhinorrhoea will clear up if four points are observed: (1) milk stopped; (2) an open-air life followed; (3) calcium gluconate or lactate given daily, together with cod-liver oil and malt extract and perhaps parathyroid; (4) a mercurial given weekly. Is there, for some forms of allergy at all events, a better desensitizing agent than a regular blue pill? For, as Mr. Frank Coke hints, whether the antigen is inhaled, as in hay fever, or ingested, as in some forms of vasomotor rhinitis, there is a general condition, a soil, which renders the individual prone to allergy, and the general measures I have indicated help to alter this. The interesting question is left with regard to these nasal affections and to asthma—Why should the respiratory tract be the favourite route for the "excretion" of histamine and eosinophils?—I am, etc.,

Glasgow, July 3. JAMES ADAM.

Excitability

SIR,—Your editorial on the action of acetylcholine on the central nervous system (May 29) requires further notice. Some time ago I collected together in my book *Excitability* the evidence of fact from which one could deduce the laws that govern the natural stimulation of beating hearts, and know their modes of behaviour when so stimulated. Up to that time, it should be noted, physiologists had only investigated the unnatural electrical excitation of cardiac muscle, and that usually in the unnatural state set up by a Stannius ligature. In some medical schools those artificialities still pass muster as the "properties of heart muscle."

In my book I also point out that the reactions of living nervous structures in the body to their natural stimulation were precisely the same as those of beating hearts when stimulated by hormones or drugs. Evidence concerning the latter not then being available, I had to leave matters at the point of formulation of a new doctrine of the inherent rhythmical activity of structures in the living body.

Such ideas were then strongly condemned by your own expert in physiology because they were "in defiance of all the established canons of physiological thought." Undoubtedly they then were. Your editorial indicates, however, that what was then a heresy is now on the way to graceful orthodoxy—a not unusual state of affairs in medicine. I may also mention that some of my predictions concerning how living neurones must act have been brilliantly confirmed by Professor Adrian of Cambridge. I mention that to fortify the opinion that investigators of these matters will not be able to evaluate their facts adequately until they learn how *beating* hearts react to natural stimulation.—I am, etc.,

King George's Medical College, Lucknow, June 20. W. BURRIDGE.

Electromedical Equipment and Radio Interference

SIR,—It has come to my notice that the British Standards Institution has formed a subcommittee for investigating the possibilities of suppressing radio interference due to electromedical equipment. I am not in a position to state what the terms of reference of this subcommittee are, nor do I know of its exact constitution. I have, however, been able to ascertain that although such a body as the British Institute of Radiology is represented the medical profession as such is not.

It seems to me that if the interests of those who employ the apparatus are to be safeguarded the British Medical Association should be represented by two members of the British Medical Association. In my opinion these should be a member of the Physical Medicine group, preferably an electrologist, and a surgeon, again preferably one who is alive to the importance of the application of diathermy in surgery.—I am, etc.,

London, W.1, July 1. PH. BAUWENS.

What is Osteopathy?

SIR,—As my brother, Dr. Kelman Macdonald, is at present in America, and therefore unlikely to see and be able to reply to Sir Ernest Graham-Little's letter in your issue of June 26, I shall be most grateful if, in his absence, you will allow me to reply on this occasion. I would particularly like to point out that I do not want to enter into this discussion on my own account, as the arguments that have been brought up are already sufficiently complicated. I ask to be allowed to reply more particularly in view of the fact that Sir Ernest's letter not only contains one serious misstatement of fact but is otherwise liable to create misunderstanding.

Surely Sir Ernest and his medical colleagues are more concerned with public safety in the future than with "old, unhappy far-off things." It is, therefore, to use his own expression, "idle" for him to go on saying that the British Osteopathic Association gave its "fullest sanction and support" to the British School of Osteopathy—it is surely of greater importance that the B.O.A. is not officially represented on the Governing Board of the School. But it is more than idle, it is positively inaccurate, for him to say that the British Osteopathic Association has not begun to comply with the present Prime Minister's requirement that it should establish reputable educational facilities. Really Sir Ernest, if he is going to indulge in public controversy of this nature, might do his opponents the courtesy of acquainting himself first with the facts.

The British Osteopathic Association examined the position thoroughly in its special College Committee, and in 1935 a limited company was registered called Osteopathic Trusts, charged specifically with the task of establishing a college and hospital which would conform in curriculum and equipment with the requirement referred to by Sir Ernest and with the standards stipulated by the General Council and Register of Osteopaths. This body now employs a full-time official who is engaged on a plan

of campaign, and the profession has further applied itself to the difficult problem of the provision meanwhile of adequate post-graduate training for those osteopaths whose previous training is not held by the General Council of Osteopaths to qualify them for the Register. It surely ill becomes Sir Ernest Graham-Little and those who think with him to taunt us with the accusation of doing nothing when we are merely taking that reasonable care which he has been accustomed to imply has been the distinguishing mark of the orthodox school.

If Sir Ernest cares to read Sir Robert Stanton Woods's presidential address, from which my brother quoted briefly, he will find there that Sir Robert differed strongly from him with regard to at any rate one of the six important schools. I will not take up space by quoting the actual words.—I am, etc.,

London, W.1, June 29. GEORGE MACDONALD.

Air Raid Precautions

SIR,—Dr. Colquhoun's suggestion in the *Journal* of June 26 that there should be established a medical committee to go fully into the measures adopted by the Government to protect the public against the effects of air raids is a good one, for many reasons. It would interest a large section of the medical world in the details of the present air raid precautions scheme ; it would refute the destructive criticisms of medical members, many of whom, one feels, have not got first-hand information on the subject, or who, perhaps influenced by pacifist ideals, do not look upon the protection of the lay public in the same light as others do. Further, some constructive help might be forthcoming for those problems in the subject which are as yet unsolved.

I feel that no one is in a position to discuss the question who has not taken out the complete course of lectures. To the medical man whose time is limited I would recommend the concentrated course which is given in the Great Central Hotel, London, once a month in the winter months. It takes place on a Saturday afternoon and all day on Sunday, and in this time the complete series of eight to ten lectures is given by experts, and the difficult points and problems which have been raised by correspondents in this column have all been answered. In many of these letters there is loose thinking and confusion, owing to the subject not being fully understood, and hence the claims of the Government have been exaggerated.

There are three main types of bombs: the high explosive, the incendiary, and the gas bomb. For the first of these there is no guaranteed treatment—either preventive or therapeutic. Diffusion and scattering of the population, so that concentration of casualties cannot take place, is all that is advised. No claims are made by the Government in this direction at all. For the incendiary bomb, which produces a fire that cannot be extinguished, and can only become harmless by being allowed to burn out, the suggestion is made to form a safe surface of sand or clay to allow this to take place rather than provide a suitable inflammatory material to start the whole house on fire. The suggested treatment may not sound infallible, but it is up to the critics to suggest a better rather than to decry what methods have been suggested, and certainly few in the hour of danger would consider the laying of a layer of sand on the floor of the upper room a task of great difficulty.

For the gas attack the gas mask has been proved a protection for all known non-blistering gases, and the protective clothing for these latter. It is suggested that it is an impossible task to train the "whole" general public—this is admitted—but it is no reason to stop training as many as possible. If a nucleus in every crowd were so instructed the knowledge would be quickly disseminated, and the common sense which they possessed would soon act as leaven in the presence of mass panic, which is one of the greatest dangers of gas attack. The problem of the child, the aged, the delicate and ill (for instance, pneumonia), and the mentally deficient is constantly raised as a reason for not instructing the sane and healthy adults. Surely such a section of the community would not be a street problem in the time of a gas attack.

Another point that is raised, that such instruction is productive of a desire for war, is surely not correct. I would say that a total unpreparedness in this country would make a war from the enemy's point of view a much more attractive proposition. One might as well say that the man who goes out with an umbrella and waterproof is asking for trouble, yet many of us know that this is done frequently by those who claim that it is the surest way to ensure a fine day!

If this subject is to be considered fairly and scientifically it must be divorced from the political bias with which many of the letters so far contributed have been tainted. For this reason I think the suggestion of Dr. Colquhoun, that the subject should be considered by a medical committee, is a good one and worthy of consideration.—I am, etc.,

Belfast, June 28. IAN FRASER.

SIR,—Surely some of your correspondents are missing the main point raised by Dr. Leys. He did not suggest that a doctor should refuse to treat air raid casualties or that the general public or the doctors should refuse to wear gas masks where these are available. His protest was directed against the use of the medical profession as an instrument of Government propaganda in what he considered a deliberate deception of the people of this country. This propaganda is designed to keep up the war spirit of the general population by persuading them that they can be protected against wholesale destruction from the air not only by gas but by high explosive and incendiary bombs. In so far as it is successful this diverts the attention of the public from any effort to enforce the removal of the causes of war and from the general ineptitude of European statesmen, whose only refuge seems to be the madhouse of competitive rearmament. Medical men need make no claim to special knowledge of the causes of international unrest, but they are entitled to refuse to be prostituted for political purposes.

It is surely irrelevant to cite the fertility of Asiatics as an argument against Dr. Frewen Moor's contention that poverty in the modern world is not due to lack of goods. The fact remains that the recent world depression was not due to a lack of the primary consumption goods but to a lack of purchasing power for these goods.—I am, etc.,

Rabley Willow, Herts, July 2. DOUGLAS MCCLEAN.

Incidence of Deafness in England and Wales

SIR,—I was much interested in the article on the above subject by Mr. A. G. Wells, which appears in your issue of July 3, and I note that there is a marked difference in the degree of deafness that is recorded by the audiometer and by tests of hearing of the conversational voice.

We are told, for example, that Grade I covers children who can hear and understand conversational voice at

20 feet or over in ordinary classrooms. If we assume that the ordinary conversational voice can be heard at a maximum of 50 feet, to hear it at 20 feet shows a diminution of hearing power of about six decibels, but we are also told that the hearing loss with the pure tone audiometer is thirty-five decibels in this grade. Now a difference of six decibels means that the sound can be heard at half the normal distance and a difference of thirty-five decibels means that the hearing distance is diminished to about one-fiftieth of the normal. We cannot accept both. We can assume that the diminution is thirty-five decibels, and that the hearing of the patient is 2 feet for the conversational voice and that he lip reads; but we cannot assume that the record for the hearing of the voice is correct, for this would mean that the voice employed could be heard at fifty times twenty —that is, one thousand feet—by the normal ear.

It is probable, however, that this discrepancy arises because the patients were not tested with the audiometer in a specially constructed silent room, in which alone the audiometer records are correct. If the tests are carried out with an audiometer in an environment of even minor degrees of noise, the records given by the instrument are very much too high, and in fact are unreliable for assessment of the degree of deafness from which the patient suffers.

I hate to suggest that there is a discrepancy when Mr. Wells has done so much, but audiometer records and the results of voice tests so frequently show similar discrepancies that it would be very valuable if Mr. Wells could clarify this point.—I am, etc.,

London, W.1, July 5. A. LOWNDES YATES.

Obituary

Dr. HORACE SWORDER died on June 18 at Guildford, where he was living in retirement. Born in 1854, he was educated at Epsom College and at St. Mary's Hospital, London, qualifying M.R.C.S.Eng. and L.S.A. in 1875, and L.R.C.P.Lond. in 1877. After holding the usual resident appointments at St. Mary's he entered into partnership with Dr. Grover at his native town of Luton, continuing there in general practice until he retired in 1924. For thirty years Dr. Sworder served Luton, with great acceptance, as a part-time medical officer of health; his yearly reports were stimulating and progressive, always provoking debate and often opposition. The Luton Children's Hospital is his permanent memorial; it was begun, at his suggestion, in 1889 and formed the chief interest of his life. Childless himself, he was passionately devoted to children, sparing no effort in their service. For sixteen years he acted as medical superintendent of the Children's Home, as it was at first called, and for long years after was the driving force behind the sustained efforts needed to ensure its permanent establishment and success. He conceived and organized a Children's Guild of Kindness with its motto, "Live not for Yourselves Alone," which proved invaluable not only by substantially helping the finances of the institution, but also by establishing a habit of giving and of service among the men and women of the future. In late years Dr. Sworder was a member of the court of the Society of Apothecaries. He was a member of the British Medical Association for sixty years, having been elected in 1877, and he played his full part in all its local activities. In 1898 he was president of the South Midland Branch, and in 1907 chairman of the Bedfordshire and Hertfordshire Division.

J. W. B.

Medico-Legal

DAMAGES FOR SHORTENED LIFE

When a person dies as a result of an unlawful act or omission by someone else his representatives may now sue the offender for damages on behalf of the estate. Originally a cause of personal action died with either of the parties to it, but the law was changed by the Law Reform Act, 1934. The change has spread much concern among doctors, whose families may now, as in the case of Connolly *v.* Rubra (*British Medical Journal*, 1936, **2**, 1174; 1937, **1**, 1099) be ordered to pay damages for the negligence of a doctor who has since died. One of the factors which the court takes into account in assessing the damages is the extent to which the expectation of life of the injured person was shortened by the negligence of the offender. The judgement of the House of Lords on appeal in Rose *v.* Ford, which became a leading case as soon as it was tried by Mr. Justice Humphreys in 1935, is therefore directly important to medical men.

The Case of Rose v. Ford

Miss Rose, aged 23, was seriously injured on August 4, 1934, in a road accident for which Mr. B. J. Ford was to blame. On August 6 her right leg was amputated and on August 8 she died from her injury. Her father, Mr. Alfred Rose, as administrator of her estate, claimed damages under the Fatal Accidents Acts, 1846–1908, for the benefit of himself and his wife in respect of the death of his daughter; and also on behalf of his daughter's estate under the Law Reform Act, 1934, to recover such damages as his daughter would have been entitled to at the moment of her death. Mr. Justice Humphreys awarded £300 damages under the Fatal Accidents Acts, and on behalf of the daughter's estate awarded £29 special damages, including funeral expenses, and £500 for pain and suffering and the loss of the leg. He would not award damages for loss of expectation of life, as he considered that the only ground for such damages could be mental suffering caused by the contemplation of early death, and that in the present case no such suffering had been proved.

Mr. Ford appealed against the award of £500 and Mr. Rose cross-appealed asking for damages for loss of expectation of life. The Court of Appeal, on October 28, 1935, reduced the £500 to £22 on the ground that Miss Rose had lived for two days only after the amputation. On the cross-appeal the court agreed that Mr. Justice Humphreys had been wrong in thinking that the ground for damages for loss of expectation of life was mental suffering. Thereafter, however, they disagreed. Lord Justice Slesser and Lord Justice Greene decided that the claim for damages for the shortening of the expectation of life was in substance a claim for the loss of the life and therefore not maintainable under the Law Reform Act, for damages must be calculated without reference to any loss to the estate consequent on the death. Lord Justice Greer disagreed with this decision, holding that the right to such damages vested in the injured person at the moment of injury and survived to the administrator.

Judgement by House of Lords

The House of Lords gave judgement in Mr. Rose's appeal on June 25, 1937. Lord Atkin, the president of the court, referred to the recent case of Flint *v.* Lovell, 1935 K.B. 354, in which the Court of Appeal held that, if a person suffered personal injuries from negligence, the damages could include a sum for the shortening of his normal expectation of life. Mental suffering was not a necessary ground. Shortening of expectation of life had always been a usual element in the assessment of damages for personal injury. He saw a substantial distinction between damages awarded to a living person like Dr. Flint because his life was shortened and damages awarded to a third person because of some other person's death. If a living person could claim damages for loss of expectation of life that right was vested in him in life,

and on his death under the Act of 1934 passed to his personal representatives. Lord Atkin did not see any reason why the fact that the expectation was realized and that death came at the time anticipated or sooner should make any difference. It was not necessary for him to assess the damages, for the Court of Appeal had stated in their judgement that if they were wrong and damages were recoverable, the amount should be £1,000. Lord Atkin therefore expressly left open such questions as whether a rich man's life has greater potentialities of pleasurable enjoyment than a poor man's; or the extent to which physical weaknesses other than those caused by the accident and not affecting the duration of life should be considered; or whether the damages should include a sum for loss of income which the deceased would have received if he had lived a reasonably long time but would not have saved so as to increase his estate. He thought that the award of £1,000 assumed a normal two-legged life, so Mr. Rose could have no more damages for the loss of his daughter's leg. He expressed no opinion whether on another basis of calculation the Court of Appeal would be right in fixing the damages for the loss of the leg for four days only.

It is therefore law that a court may award to the representatives of a deceased person substantial damages for loss of expectation of life, even though the person only lives a few days. The case also illustrates one of the most admirable features of our judicial system, for Mr. Rose, though he sued as a poor person, has been able to appeal successfully to the House of Lords at the expense of the State and of the counsel and solicitors concerned.

The Services

ALEXANDER MEMORIAL PRIZE

Lieut.-Colonel R. F. Bridges, R.A.M.C., has been awarded the Alexander Memorial Prize for the year 1936, consisting of a gold medal and a sum of £40. The prize is awarded annually to an officer of the Royal Army Medical Corps for professional work of outstanding merit.

LEISHMAN MEMORIAL PRIZE

Major A. G. Harsant, O.B.E., R.A.M.C., has been awarded the Leishman Memorial Prize for the year 1936, consisting of a silver medal and a sum of £30. The prize is awarded annually to an officer of the Royal Army Medical Corps, or of the Army Dental Corps, for work of outstanding merit.

NORTH PERSIAN FORCES MEMORIAL MEDAL

R. Lewthwaite, D.M., Colonial Medical Service, has been awarded the North Persian Forces Memorial Medal for the year 1936 for his paper on "The Pathology of Tropical Typhus (rural type) of the Federated Malay States," published in the *Journal of Pathology and Bacteriology*, January, 1936. The medal is awarded annually for the best paper on tropical medicine or hygiene published in any journal during the preceding twelve months by a medical officer, with less than twelve years' service, of the Royal Navy, Royal Army Medical Corps, Royal Air Force, Indian Medical Service, or Colonial Medical Service.

DEATHS IN THE SERVICES

Colonel WILLIAM ALLAN MAY, C.B., late R.A.M.C., died at Bath on May 18, aged 86. He was born at Stoke Damerel on September 18, 1850, was educated at Guy's, and took the L.S.A. in 1873 and the M.R.C.S. in 1874. Entering the Army as surgeon on September 30, 1874, he reached the rank of colonel on March 22, 1903, and retired on September 18, 1907. He served throughout the South African War from 1900 to 1902, when he held the rank temporarily of full colonel while principal medical officer of an infantry division, took part in operations in the Transvaal, the Orange River Colony, and Cape Colony, was present at the actions of Biddulphsberg and Wittebergen, was mentioned in dispatches in the *London Gazette* of April 16, 1901, and received the Queen's medal with three clasps, the King's medal with two clasps, and the C.B. He rejoined for service in the war of 1914–18 immediately it began, from August 6, 1914.

Universities and Colleges

UNIVERSITY OF OXFORD

The following candidates have passed in the examinations indicated:

MATERIA MEDICA AND PHARMACOLOGY.—G. Ashforth, H. M. Balfour, J. T. Burrowes, J. P. Childs, D. H. Davies, R. G. Eager, F. Fulton, A. G. Hardy, S. J. S. Hughes, W. G. J. Hughes, R. M. Lattey, J. A. L. Leeming, E. J. L. Lowbury, D. Micklewright, E. S. Nicholson, F. P. Powell, L. G. C. E. Pugh, R. J. Rossiter, A. J. L. Smith, E. Smith, W. A. H. Stevenson, R. W. Tibbets, R. V. Young, O. C. Sandys.

FORENSIC MEDICINE AND PUBLIC HEALTH.—L. B. Bok, R. C. Browne, S. E. Furber, O. I. Green, R. M. Hugo, E. L. James, J. G. Jamieson, J. B. Longmore, J. E. Lovelock, H. Muller, J. A. Partridge, M. A. Partridge, J. C. Prestwich, R. Roaf, T. R. Savage, N. E. Stidolph, C. M. F. Walters, D. Whitteridge, W. E. Young, R. Billig.

PATHOLOGY.—J. C. G. Abraham, J. M. Almond, J. S. Astbury, J. B. Atkins, D. R. Cargill, D. L. P. de Courcy, C. Exell, L. G. C. E. Pugh, E. B. G. Reeve, J. Scholefield, A. Shannon, E. P. S. Snell, S. F. Taylor, R. R. Wethered, L. L. Whytehead, A. M. L. Isabella, A. C Kohn-Speyer.

MEDICINE, SURGERY, AND MIDWIFERY.—R. G. Blackledge, W. W. Coppinger, D. I. Crowther, A. C. Grey, G. F. C. Hawkins, M. H. Hughes, D. Jefferiss, J. Mason, R. B. Niven, A. R. Norton, M. A. Partridge, I. F. Rose, A. F. Smith, T. B. Snell, R. H. S. Thompson, B. M. Thornton, C. B. I. Willey, W. Wynne Willson, A. L. Young, W. B. Young, A. J. M. T. Barnes, R. Billig, J. M. Sherring.

M.CH.—M. W. C. Oldfield.

DIPLOMA IN OPHTHALMOLOGY.—C. A. Buchanan, M. M. A. Dubash, V. B. Mankad, J. D. Maude, Y. K. C. Pandit, M. J. Philip, E. V. W. Pockley, L. R C. Rose, C. A. Stanley.

UNIVERSITY OF CAMBRIDGE

Dr. David Keilin, F.R.S., has been re-elected Quick Professor of Biology. Mr. J. D. Boyd has been appointed university lecturer in anatomy, and Dr. W. A. H. Rushton has been re-appointed university lecturer in physiology. Mr. S. J. R. Reynolds and Dr. C. D. P. Jones have been appointed university demonstrators in anatomy, and Mr. A. L. Hodgkin university demonstrator in physiology. Dr. G. N. Myers has been reappointed university demonstrator in pharmacology. All these appointments are for three years from October 1, 1937.

Applications for the Gwynaeth Pretty studentship, the holder of which shall devote himself to original research in the aetiology, pathology, and treatment of disease, with particular but not exclusive reference to diseases which cripple or disable in childhood or early life, should be sent, with copies of papers containing published work and testimonials and references, before August 1, to Professor H. R. Dean, Department of Pathology, from whom further information may be obtained. This studentship, of the annual value of £200, is tenable for three years.

Applications for the Nita King scholarship, the holder of which shall devote himself to original research in the aetiology, pathology, and prevention of fevers, should be sent, with copies of papers containing published work and testimonials and references, before August 1, to Professor Dean. This scholarship is of the annual value of £60.

The Benn W. Levy research studentship in biochemistry will become vacant on October 1. Applications for its tenure should be addressed to Sir F. G. Hopkins, F.R.S., at the School of Biochemistry, before July 24.

At the congregation held on June 19 the following medical degrees were conferred in addition to those reported in this column on June 26:

M.B., B.CHIR.—*E. H. Platts.

M.B.—*M. P. Morel, *S. H. B. Platts, J. W. W. Jepps, M. H. Harding, C. L. Heanley.

* By proxy.

UNIVERSITY OF LONDON

The University Studentship in Physiology for research in physiology, of the value of £100, has been awarded to Juan Pete Quilliam of University College.

Dr. A. A. Miles, F.R.C.P., has been appointed to the University Chair of Bacteriology tenable at the University College Hospital Medical School, and Professor J. H. Dible, F.R.C.P., to the University Chair of Pathology tenable at the British Post-Graduate Medical School, both from October 1.

UNIVERSITY OF BIRMINGHAM

At a congregation held on July 3 the following degrees were conferred:

HON. LL.D.—Sir Gilbert Barling Bt., C.B., C.B.E., F.R.C.S.
M.D. (STATE MEDICINE).—*Ex Officio:* H. P. Newsholme.
M.B., CH.B.—I. Ackerman, Enid I. M. Addenbrooke, *†N. Ameli, †T. E. D. Beavan, R. H. F. Brain, *J. W. Brown, V. H. Cooper, Enid Cyriax, C. M. Fenn, E. R. S. Grice, J. B. W. Hayward, A. C. Houghton, Joanna M. Hughes, Joan J. Lockley, M. Meir, *G. Mitchell, *C. P. Nicholas, W. H. Osborn, H. G. H. Richards, E. J. Richardson, *†Frances B. Robinson, R. L. Sadler, J. H. Sangster, *J. M. Small, O. E. Smith, *† C. W. Taylor, F. H. Vollam, M. A. G. Ward.

* Second-class honours. † Distinction in medicine.

The following scholarships, medals, and prizes have been awarded: *Queen's Scholarship* (third year), J. C. White; (fourth year), P. H. Davison; (fifth year), W. G. Mills; (final year), N. Ameli. *Ingleby Scholarship* (final year), J. M. Small. *Arthur Foxwell Memorial Medal* (final year), T. E. D. Beavan. *Sampson Gamgee Memorial Medal in Surgery* (final year), and *Priestley Smith Prize in Ophthalmology* (final year), R. H. F. Brain. *Russell Memorial Prize*, N. Ameli. *Leith-Newman Prizes in Pathology* (fourth year), Medical, B. A. E. Johns; Dental, S. J. Webb. *Peter Thompson Prize in Anatomy* (third year) and *Bertram Windle Prize in Anatomy*, H. A. Shaw. *John Barritt Melson Gold Medal in Physiology* (third year), J. C. White.

UNIVERSITY OF DURHAM

In convocation on June 29, with the Vice-Chancellor, Sir Robert Bolam, M.D., presiding, the honorary degree of Doctor of Science was conferred on Sir Henry H. Dale, M.D., F.R.S., director of the National Institute for Medical Research, Hampstead; and the honorary degree of Doctor of Surgery on Dr. R. P. Ranken Lyle, emeritus professor of midwifery and gynaecology in the University of Durham.

UNIVERSITY OF ST. ANDREWS

On June 30 the honorary degree of LL.D. was conferred on Angus MacGillivray, M.D., D.Sc., Assessor of the General Council on the University Court, and on William Ogilvy Kermack, D.Sc., of the Laboratory of the Royal College of Physicians of Edinburgh.

UNIVERSITY OF GLASGOW

The King, on the recommendation of the Secretary of State for Scotland, has approved the appointment of Noah Morris, M.D., D.Sc., F.R.F.P.S.G., to be Regius Professor of Materia Medica in the University, in the place of Professor Ralph Stockman, resigned.

UNIVERSITY OF WALES

The following candidates have been approved at the examination indicated:

M.D.—Ll. M. Edwards, Dorothy M. James.

The following candidates have satisfied the examiners in the examination indicated:

DIPLOMA IN PUBLIC HEALTH.—*(Part I):* R. M. Dykes, W. J. M. Evans, D. T. Richards, B. A. Thomas, D. A. O. Wilson.

NATIONAL UNIVERSITY OF IRELAND

UNIVERSITY COLLEGE, CORK

The following candidates have been approved at the examinations indicated:

M.B., B.CH., B.A.O.—*J. N. Twohig, *J. Burke, †J. F. J. Hickey, †M. Lentin, †R. G. G. Barry, †J. J Martin, J. Galvin, H. Gremson, J. P. Lane, Margaret M. Loughnan, J. J. McCarthy, D. F. Murphy, T. K. Murphy, P. L. O'Neill. T. Sheahan. *Part I:* Ellen M. M. Murphy. *Part II and Pathology:* C. Marchment, P. J. Ryan. *Part II:* P. O'Flynn. *Pathology:* D. O'Keeffe.
D.P.H.—M. J. McCarthy, J. O'Herlihy.

* First-class honours. † Second-class honours.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—W. D. Brinton, O. D. Gilmore, F. H. Holder, R. Robins-Browne.
MEDICINE.—J. R. Audy, G. R. Hopper, R. Robins-Browne.
FORENSIC MEDICINE.—J. R. Audy, R. Robins-Browne.
MIDWIFERY.—J. B. Alexander, B. M. Hulse, L. De C. Kite, H. A. N. Passmore, G. G. Sahasrabuddhe.

The diploma of the Society has been granted to J. R. Audy, G. R. Hopper, R. Robins-Browne, and G. G. Sahasrabuddhe.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Election to the Council

Three Fellows were elected on July 1 into the Council to fill the vacancies caused by the retirement in rotation of Sir Holburt Waring, Bt., Mr. C. H. Fagge, and Mr. W. Sampson Handley. The result of the poll was as follows:

	Votes
WILLIAM SAMPSON HANDLEY (Middlesex) ...	665
CHARLES HERBERT FAGGE (Guy's)	605
CECIL PEMBREY GREY WAKELEY (King's College)	480
James Ernest Helme Roberts (St. Bartholomew's)	367
Vincent Zachary Cope (St. Mary's)	359
Sir Lancelot Edward Barrington-Ward (Great Ormond Street)	287
William Hugh Cowie Romanis (St. Thomas's)	248
Walter Goldie Howarth (St. Thomas's) ...	217

In all 1,227 Fellows voted; in addition thirteen votes were found to be invalid. Mr. Fagge, Mr. Handley, and Mr. Wakeley are all elected for the full period of eight years.

Medical Notes in Parliament

The Royal Assent was given on July 1 to the Children and Young Persons (Scotland) Act, the Widows', Orphans', and Old Age Contributory Pensions Act, the Public Health (Drainage of Trade Premises) Act, and other Acts, and on July 6 to the Exportation of Horses Act, the Road Traffic Act, and the Hydrogen Cyanide (Fumigation) Act.

The Hairdressers (Registration) Bill, introduced by Lord Strabolgi, was read a first time in the House of Lords on July 2. On July 6 the Physical Training and Recreation Bill passed through committee of the House without amendment, and the Cinematograph Films (Animals) Bill and the Teachers (Superannuation) Bill were read a second time.

The Vote for the Ministry of Labour, the Finance Bill, and the Agriculture Bill have been the chief business of the House of Commons this week. The Cinematograph Films (Animals) Bill was read a third time by the House on June 29.

Sir Frank Fox, secretary of the Empire Rheumatism Council, and Dr. W. S. Copeman addressed the Parliamentary Medical Committee at the House of Commons on July 1. They explained that the Empire Research Council was being established on the lines of the British Empire Cancer Campaign, and as a result of a report by a special committee of the Royal College of Physicians. At the same meeting Dr. Davies, professor of pathology in the University of Hong Kong, spoke about a report made by a committee to the Hong Kong Government, which suggested a general curtailment of the university and, in particular, of the medical faculty and its research work. Sir Francis Fremantle, who presided at this meeting of the Parliamentary Medical Committee, and Mr. K. W. M. Pickthorn, who was invited to attend as a member for Cambridge University, went after the meeting to put the facts about Hong Kong before Mr. Ormsby Gore, who arranged for the matter to be brought before the Education Advisory Committee at the Colonial Office.

The Local Government Superannuation Bill was read a third time in the House of Commons on July 2, after a discussion about its application to officials whose military service during the war was voluntarily extended after November 11, 1918.

On July 2 also the Trade Marks (Amendment) Bill passed through report and third reading. Allusion was

made to the use of such trade names as "aspirin," "aspro," and "yeast-vite."

On July 5 the Hydrogen Cyanide (Fumigation) Bill passed through committee of the House, and the Agriculture Bill was read a second time.

The report by the Government Actuary on the Fourth Valuation of the Assets and Liabilities of Approved Societies was laid on the table of the House of Commons on July 5.

Health Services of Scotland

Dr. WALTER ELLIOT, in the House of Commons on June 24, brought forward the estimates for the Department of Health for Scotland, including a grant-in-aid of the Highlands and Islands Medical Service and grants under the National Health Insurance Acts. He said no one in Scotland was completely satisfied with the position in that country. Improvements would have to be made in the health services and in housing. There was no reason for despondency but every reason for action. Since the estimates were last considered a report had been received on public health services from an inquiry carried out under the chairmanship of Professor Cathcart. There had also been an inquiry carried out by the Department itself into the working of the block-grant system. This had been followed by legislation which improved the central grants to Scottish local authorities to the extent of nearly £1,500,000 a year. The Maternity Services Act had recently passed through Parliament, a vote for physical training had been carried, and a Bill had just been presented to close the gap between leaving school and entrance into health insurance. Infant mortality last year was 82 per 1,000 births. That was higher than the rates for the previous three years, but lower than the rates before 1933. The rate over the whole country for the first quarter of 1937 showed a marked improvement over that for the similar period of 1936, while the rate for sixteen large Scottish towns over five months of 1937 showed that the improvement had continued. Notified cases of influenza in Scotland rose from 43,000 in 1935-6 to 123,000 in 1936-7. Cases of whooping-cough—a serious malady last year in Scotland—rose from 1,144 in the first quarter of 1936 to 8,417 in the first quarter of 1937. In spite of these epidemics the health of Scotland continued to improve taken generally.

The Department was taking action on some of the lines recommended by the Committee on Scottish Health Services, and action would have to be taken on many more. The committee dealt with the need of a new sanitary code and the organization of hospital services. That work was proceeding. It dealt also with the need for extended general practitioner service, and recommended medical benefit for the dependants of insured persons. The most important of the committee's recommendations referred to maternity and child welfare. The Government had passed the Maternity Services (Scotland) Act, 1937, which came into force on May 16. There was no case under the Act in which a certified midwife would not be present during the whole time of labour, and in addition a medical man would be notified and would hold himself in readiness to attend. The maternity figures for Scotland had come down this year, and maternal mortality was at present the lowest recorded in Scotland; there was a saving of some sixty lives over the figure for the previous year.

SLOW HOSPITAL REORGANIZATION

Reorganization of hospitals under local authorities was not proceeding as quickly as they would wish. Some of the bigger authorities had taken steps for comprehensive schemes under the Act of 1929 and many were taking steps of their own to bring their hospital service up to date. A scheme which would give Lanarkshire as a whole a new general and a new maternity hospital as well as improved care of infectious diseases would have been well on its way, but unfortunately the large boroughs would not combine with the county council. Further provisions were being examined by the county council and two of the boroughs, three of the boroughs having decided to stay out. Provision was being made for a new municipal hospital at Greenock for the care of the general sick. Unfortunately Port Glasgow decided not to participate in the scheme on the ground that it would not have a share in the management of the institution. In Dumfries and Galloway arrangements were going more smoothly. There the local authorities were in negotiation with the voluntary hospitals as well, which was very desirable. In the north some six local authorities had jointly agreed to maintain a consulting physician at the Northern Infirmary, Inverness. Four schemes adopted under Section 27 of the Local Government Act, 1929, covered 800,000 of the people of Scotland, the authorities in question being Edinburgh, Dundee, Aberdeen Borough, and Bute. It seemed odd that the desirability of a general scheme of this kind should so far have appealed only to six authorities.

In the Highlands and Islands the schemes under discussion were extensions of hospitals at Lerwick, Kirkwall, and Stornoway. At Lerwick, with Treasury approval, the Department of Health had promised the managers of the Gilbert Bain Hospital a grant of 80 per cent. of £45,000, the estimated cost of a new hospital. In Kirkwall the Balfour Hospital trustees had applied for a grant to enable them to extend the hospital at a cost of £10,000, and the application was receiving sympathetic consideration. At Stornoway the managers of the Lewis Hospital had been promised a grant of £14,000 from the Highlands and Islands Medical Fund for extension of the hospital.

HEALTH OF SCHOOL CHILDREN

So far as school children were concerned the big constructive measure in addition to medical inspection was the milk-in-schools scheme. In certain areas the increase in numbers under the scheme had not been what was wished. In Lanarkshire, in the spring of 1936, 67,000 children were having milk in the schools, but since then the figure had dropped to 35,000. He did not know the reason for such a decline, which showed itself in areas where a great quantity of the milk was supplied free as well as in areas where half-price was charged. This was not satisfactory and required further consideration. Nevertheless in Scotland 294,000 school children were getting a ration of milk every school day. This would manifest itself in improved health, particularly in the condition of the teeth. The condition of the teeth of the people of Scotland was bad and that of the school children was unsatisfactory, and a supply of mineral salts must show itself in improved dentition and ultimately save expense to the local authority or to the individual. Since this subject was last before the House Berwickshire, Roxburghshire, and Selkirkshire had been brought within the ambit of the scheme. Further surveys were being undertaken by Professor Cathcart and Sir John Orr, and the northern survey under Sir John Orr was being supplemented by assistance from the Carnegie Trust. The fullest co-operation was afforded by the Education Department and the Departments of Health and Agriculture. It was worth remembering how far Scotland had advanced in the health of school children. As recently as in 1901 the mortality of children between 5 and 14 was 3,700 deaths. Last year the figure was about 1,500. In 1870 6,000 children between 5 and 14 died in Scotland, although 40 per cent. of the population was then rural as against 20 per cent. at present, showing that fresh air was not sufficient to produce health.

Turning to the question of water supplies, Dr. Elliot said regional schemes were in progress in the rural areas of Dumfries and Kirkcudbright, and similar schemes were under consideration by other county councils. He hoped an increase in money available under the block-grant would form a source from which these desirable reforms could be accelerated. Assistance had been given by the Commissioner for the Special Areas to water supply schemes totalling £225,000, and the Committee on Scottish Health Services recommended a special grant for water supply in the Highlands and Islands, where there was a special problem. In the past seventeen years they had built in Scotland about 250,000 houses, which meant that nearly one million people had obtained better accommodation, but another 250,000 houses were required, and they could not take another seventeen years to build

them. There were 100,000 houses in Edinburgh, and they had to build a new city of Edinburgh every four years. At present they were only building at the rate of a new city of Edinburgh every eight years. Local authorities were doing their utmost to apply the principles of town planning to the new areas which were being built—in some cases not satisfactorily.

REDUCTION MOVED

Mr. TOM JOHNSTON, moving a reduction of the Vote, said that the annual report stated that infantile mortality was 30 per cent. worse in Scotland than in England and Wales. They also knew that in the chief infectious diseases Scotland was two and a half times worse than England and Wales. On the other hand, the health conditions of school children were improving, although the evidence of the county of Angus, which included the city of Dundee, showed that in secondary schools boys were 2 inches taller and 5 pounds heavier in weight at the age of 12 than were boys in the burgh schools. Similar figures had previously been supplied by the medical officer of health for Glasgow and by medical officers of health in other parts of the country. Under the scheme for supplying milk to schools every child between 5 and 14 years during school life received milk at 1s. per gallon, but in the case of the child of 4 who was not at school 2s. a gallon was charged for the milk. How could that be justified? Milk was delivered in bulk to institutions at 1s. 2d. a gallon and only 4d. to 6½d. a gallon was charged to the manufacturers. It had been said that disease cost us three hundred million pounds a year. It would pay to supply milk at 1s. a gallon to the mothers and babies instead of handing it over at 6d. a gallon for the purpose of chocolate manufacturers. If Dr. Elliot took up this question he would have the active sympathy of both the Scottish and English Milk Boards. If the price of milk was reduced to 1s. a gallon it would increase by 3s. 9d. a week the purchasing power of the average family of five units.

HIGHLANDS AND ISLANDS: INADEQUATE HOSPITAL ACCOMMODATION

Sir ARCHIBALD SINCLAIR expressed his appreciation of the prominence Dr. Elliot had given to the hospital services that day for the first time in debates on the Scottish Health Department. Progress in those services was slow, and he hoped the Secretary of State would press it on. He was delighted to hear that a consulting physician had been appointed to the hospital at Inverness and was sure his services would benefit the Highlands. The Department of Health in its report for 1936 quoted a section of the report of the Committee on Scottish Health Services which acclaimed the Highlands and Islands Medical Service as an outstanding success. The Medical Service Committee, however, had made a recommendation for the improvement of the service. They said additional hospital accommodation and specialist services for medical and maternity patients should be provided, and also additional nurses and a further equipment of nurses with motor cars. He would like to know whether these recommendations were being pursued. He did not see anything in the Health Department's report about extended provision for refresher courses for nurses and little about the improvement of nurses' housing conditions. An additional grant-in-aid of the local authorities' health services in the Highlands and Islands was an urgent matter.

Mr. WELSH said the number of rural houses in Lanarkshire was 57,675. Of these, in the year 1936, only 1,177 were inspected, and of those inspected 46 per cent. were found to be unfit for habitation. Of the 57,675 rural houses 22,252 were overcrowded by the Department's own standard. At the end of 1936 not a single house was being built in the rural areas of Lanarkshire for the purpose of dealing with overcrowding.

Mr. KIRKWOOD said he had just come back from a cruise round the Western Isles and had never seen healthier and happier children, largely owing to the medical services that have been instituted in the Highlands and Islands. The doctor at Stornoway had drawn his attention to the fact that the hospital accommodation was inadequate. The doctor told him that at the sanatorium in Lewis they could not get fresh eggs, although there was no reason why they should not be supplied.

Mr. LEONARD said the dental condition of school children according to the Department's report was one of the major problems of the school health services, yet only fifty-one full-time and thirty-one part-time dentists were engaged. That meant only one person attending to 12,000 children, although there should be one qualified dentist to every 5,000 children. There were only fifty nursery schools in Scotland attended by 1,800 children, and of that number thirty-six were run by voluntary bodies. The death rate from pulmonary tuberculosis was the lowest on record—55 per 10,000—but the death rate from the disease was the same as last year—74 per 100,000. Had anything been done by the Department to bring to the notice of the competent authorities the special report on the need for greater co-operation and the general advancement in the treatment of tuberculosis?

Mr. WEDDERBURN replied for the Government, and said the Department of Health had drawn the attention of local authorities to the need for providing the fullest supplies of milk in maternity and child welfare centres. The Department would probably issue another memorandum dealing comprehensively with this point. Administrative action on milk prices that could be taken through the agency of the Milk Marketing Board would have to be discussed on the vote for the Department of Agriculture. Mr. Kirkwood would be glad to know that the hospital at Stornaway would not be delayed through the pressure of other building works.

On a division the motion for reduction of the Vote was defeated by 118 to 84.

Trade Effluents

The Public Health (Drainage of Trade Premises) Bill was considered on report in the House of Commons on June 23 and was read a third time. On the third reading Admiral BEAMISH said the Bill was capable of reducing the pollution of rivers, but he asked whether the laws which existed apart from this Bill could and would be enforced. At present the Rivers Pollution Prevention Acts were not put into force. They were full of legal loopholes, and there was overlapping responsibility on almost every river in the country. Authorities concerned with the enforcement of the anti-pollution laws were often pollutors of the streams themselves. Sir KINGSLEY WOOD said he would endeavour to see that the Bill was put into operation properly, and he relied on the co-operation of the local authorities. The Bill had received general approval.

Marriage Bill

The Marriage Bill, which has already passed the House of Commons, was before the House of Lords on June 24 when Lord ELTISLEY moved its second reading and explained its provisions. He said divorce would be permitted where the spouse was of incurably unsound mind. Such persons must have been continuously under medical care and treatment for not less than five years immediately preceding the presentation of the petition and must have been found by the court to be incurably insane. With these safeguards there could not be legitimate ground for alarm. Clause 6 prescribed new grounds on which a marriage could be set aside by reason of nullity. All these grounds had been recommended by the majority of the Royal Commission of 1912. One ground was that either party at the date of the marriage was of unsound mind or epileptic, and another that the respondent was suffering from venereal disease. If proceedings were instituted under these headings the petitioner must have been ignorant of the facts at the time of the marriage.

Lord FITZALAN OF DERWENT opposed the Bill.

The ARCHBISHOP OF CANTERBURY said he could not support the inclusion among grounds for divorce of insanity as defined in the Bill, and he believed the proposal marked a retrograde step in medical science, which increasingly regarded this disease as one capable of cure. He was prepared to support the nullity grounds for divorce.

Lord SNELL referred to the position of the man with children whose wife had become mentally sick and for whom there was no relief, and he appealed to the House to give the Bill an uncontested second reading.

Lord ATKIN said the clause about nullity was unusual in providing that the spouses might have their marriage annulled if there had been recurrent attacks of epilepsy, or if one of the spouses was suffering from venereal disease. There was no definition of the latter. It did not mean communicable venereal disease because that would be cruelty which would be enough to secure divorce. The causes he had mentioned, which were entirely new, might not be discovered within twelve months.

The BISHOP OF DURHAM said that when he looked at the conditions under which insanity was to be declared a ground for divorce, and when he consulted medical authorities, he found the probability of the insanity being cured was so slight that it really would be irrational to make that a basis for refusing relief which might fairly be claimed by a large number of people.

Lord ALNESS said the majority report of the Royal Commission on Divorce was entirely in favour of making insanity a ground for divorce. It pointed out that insanity differed from most other maladies in that in involved a complete break-up of the household and removal of the patient perhaps for years. If it were said that insanity was due to misfortune rather than to fault, he had yet to learn that decrees of divorce were handed out as a reward or a punishment.

On June 28 the debate was resumed by the BISHOP OF BIRMINGHAM, who said he was in favour of the provision that insanity, on the conditions laid down, should be a ground of divorce.

The MARQUESS OF SALISBURY opposed the Bill, and asked why, if they were to include as a ground for divorce insanity because it made marital relations impossible, they should not include every other disease that made marital relations impossible. Who was to say when insanity was incurable? It could only be a matter of opinion of one or more doctors. Persons suffering from melancholia would have cruelly added to the weight and burden of their fears the anxiety that their melancholia might become incurable, that divorce would then be hanging over them, and that they might be deserted in a time of great need.

LORD DAWSON OF PENN'S VIEWS.

VISCOUNT DAWSON OF PENN said that collusion, adultery, and perjury, injuring as they did the characters of the people who resorted thereto, and having the further objection of damaging respect for the law in the eyes of the public, were very great evils. Some of the speakers were disposed to say that collusion and adultery were due to a weakening of the fabric of the moral sense. One speaker had even referred to licentiousness as being the cause. Were not the causes of our present troubles to be found in the changes in thought and in mind which had taken place in the course of the years? Changes must come, whether they were in thought or conduct, and what was to him so difficult to understand was why the idea of marriage should alone be expected to remain static. Where the kernel of marriage had been lost, the tendency of the present age was to throw away the husk—and could we say that it was wrong? The law, having lost its social sanction, was increasingly disregarded. Surely the cure was to adapt the law to the prevailing mind of the community, and this was what this Bill seemed to do.

The increase in divorce did not mean a corresponding increase in marriage failures, because in former days more married people lived with their failures. To-day these failures were jettisoned when they were so irremediable as to make family life a pretence and a damage to the children. Further, in the past the wife had no more equality in sex than she had under the law. Often she was but the passive recipient of her husband's sex needs, while her own sex life was too often submerged by repeated and alternating periods of pregnancy and lactation. In the years preceding the war freedom and equality were coming to women, and with this an increase in sex-consciousness. The war accentuated these changes, and henceforward men and women had a freedom of companionship hitherto unknown. The result of women being more sex-conscious was that a woman expected a sex-satisfied life, just as she demanded equality of companionship, and if deprived of this discontent and a sense of failure were apt to follow. It followed, therefore, that women did contribute more to marriage failures than they did in days gone by, when woman was a more submissive partner. On the other hand, it was his belief that marriages which were successful to-day reached a higher level of happiness than at any previous period.

Passing to the clauses of the Bill, Lord Dawson said that the object of the five-year clause, as he understood it, was to prevent the break-up of marriage for a cause which was transient and curable. He suggested that five years was too long. New attachments would be very apt to arise during the waiting period, and he had his doubts whether they would stand the test of five years' celibacy. That was a reasonable term, perhaps, for someone in their early twenties, but it became a much more serious matter if a woman of 28 was asked to wait five years. It would carry with it the grave disadvantage that it would be destructive of the possibility of a second marriage. He regretted that the Bill did not attempt to deal with or devise means of disentangling and remedying the causes of marriage disharmony in their early stages. Members of his own profession knew full well how many were the misfits of marriage. The trouble might be physical, it might be psychological, which come to them in the guise of ailing health, and how often by imparting knowledge and understanding an endangered marriage might be put straight. Ways and means for making such help widely available would be well worthy of exploration.

INSANITY AS GROUNDS FOR DIVORCE

Lord Salisbury had touched on the subject of insanity, and had said it was impossible to depend on the opinion of doctors. Lord Dawson's answer was that in this imperfect world we had in all our daily relations to trust to those who were expert in the varied branches of knowledge and experience. The care with which matters of insanity were considered by his profession, checked and controlled as they were by their colleagues of the law, gave greater security to the sufferers from mental disorders than was given in any other country in the world. When we came to insanity, he agreed that we were up against difficulties. If we limited the period of continuous treatment to three years he thought we might exclude the chances—and the reasonable chances—of recovery. There was this further reason against making the period too short—that the patient might have a knowledge that he or she was in danger of divorce, and, in some instances, anxiety as to a possible divorce might prejudice the patient's recovery. He had a suggestion to make which he thought was a substantial one. It should be either a continuous period of five years or—and he regarded this as very important—whenever a recurrent form of mental disease had been established. If we increased the period and paid special attention to the feature of recurrency we should provide a just solution for both the patient and the patient's home. There were certain forms of insanity which were cyclical.

There was one important omission from the Bill—homosexuality should be made a cause for divorce alike for men and women. He regretted also the omission of inveterate alcoholism and inveterate drug-taking. Only members of his profession knew the desperate state of fear in homes when one of the partners was the victim of inveterate and incurable drug addiction or alcoholism. Drug addiction, though more subtle than alcoholism, could bring destruction to families with an ease which we all wished to avoid. He supported the second reading of the Bill. With certain amendments it would make, in his judgement, more firm the institution of marriage, and make life more honest, more just, more in accordance with the facts of life.

Lord MAUGHAN said that there was an elaborate insanity definition in Clause 3. The number of persons who recovered

after five years' continuous treatment in one of the places mentioned in the clause was very small. In the committee of the House of Commons it was stated to be 1 per cent., but he thought that was a mistake. It should be put a little bit higher. But assuming that 2 per cent. recovered after five years in a place of detention, the question they had to ask was this: "How many of these 2 per cent. are persons of whom the doctors in charge of the institution would declare on oath that they had shown no signs of improvement during the five years?" He did not think that the two conditions could possibly be fulfilled so as to leave open cases where there would be future recovery. The number of those who would recover after five years being as small as it was, and the fact that if there was ever going to be an improvement it would be observable during the five years, their Lordships might be satisfied that not one case in a thousand would slip through the two-fold qualification necessary to fit the case as one within the Bill, if the Bill passed in its present form.

The Bill was read a second time without a division.

Delusional Insanity in Dartmoor Prisoner

Mr. D. N. PRITT asked on June 24 whether the system called "knock" whereby prisoners under punishment were awakened by a warder knocking on their cell door at short intervals throughout the night was, or had recently been, in operation at Dartmoor; whether it had official sanction and, if so, in what circumstances. Sir SAMUEL HOARE replied that there was no foundation whatever for the suggestion that such a system existed, or had recently existed, at Dartmoor or any other prison.

Mr. PRITT also asked if the attention of Sir Samuel Hoare had been drawn to the case of a prisoner at Dartmoor who had a crippled arm and was certified insane and removed to Broadmoor; whether that prisoner was still at Broadmoor; whether he was now sane, and, if not, from what form of insanity he was suffering; whether his insanity was brought about wholly or partly by his treatment in Dartmoor; whether his arm became crippled as a result of an attack upon him by a prison officer at Dartmoor; and whether any inquiry had been, or would be, held into the circumstances under which his arm was crippled. Sir SAMUEL HOARE presumed that the case referred to was that of a prisoner who in April of last year sustained a deep cut on his right forearm from broken glass. The circumstances were fully investigated at the time by the Board of Visitors, whose inquiry showed that there was no foundation for the suggestion that he had been attacked by a prison officer. The suggestion that the prisoner subsequently became insane owing to his treatment in prison was equally unfounded. His mental condition had improved but he was still unfit to leave Broadmoor Asylum. He was suffering from delusional insanity.

Death following Diphtheria Prophylaxis

On June 24 Mr. LEACH asked the Minister of Health whether he was aware that an Irish jury attributed a death from generalized tuberculous infection following prophylactic inoculation against diphtheria to the presence of tubercle germs in a bottle of prophylactic supplied by the English firm of chemists who supply most of the diphtheria prophylactic used by public authorities in England and Wales; and whether he would have a searching inquiry made into this matter in view of the seriousness of the allegation made.

Mr. BERNAYS: I have seen a Press report to the effect stated in the first part of the question. As to the second part, careful inquiry concerning the prophylactic supplied by the firm referred to has already been made by medical officers of my Department, and the result leads to the conclusion that no tubercle bacilli were present. As the matter is somewhat technical I will send the hon. member further particulars.

Medical Supplies to Bilbao

On June 28 Miss WILKINSON asked the Secretary of State for Foreign Affairs whether it was upon instructions from the Foreign Office that medical supplies were not allowed to be sent back in the *Habana* on its return to Bilbao, although the invoices showing that the boxes only contained medical supplies were shown to the Foreign Office.

Mr. EDEN: The Foreign Office was approached by the Spanish Medical Aid shortly before the *Habana* was due to return to Spain from this country at the end of last month with a request for permission to place medical supplies on board. In view of the clear assurances given to the insurgent authorities that Spanish refugee ships receiving the protection of His Majesty's ships should return to Spain in ballast, it was decided that to agree to this request might prejudice future evacuation arrangements. At the same time His Majesty's Government offered to provide information regarding sailings to Bilbao of British merchant ships which might be willing to carry medical supplies.

Physical Training and Recreation Bill

The Physical Training and Recreation Bill (the provisions of which were summarized in the *Supplement* of April 3, p. 166) received a second reading in the House of Lords on June 29. Earl STANHOPE, who moved the second reading, said that the demand for increased opportunities for physical training and fitness, particularly among the younger generation, was one of the most striking phenomena of the present day. He based the demand for physical training and fitness on the results of national education. For many years they had been improving physical training, and whereas only some two hours a week used to be given for playground exercises and gymnastic activities, at present it was not uncommon in elementary schools for a period of physical activity to be provided for every day. Since the war they had been pressing for a wider and more varied syllabus of physical training to include an adequate daily period of exercise, organized games, swimming instruction, and gymnastics. The result had been that children had left school with a desire for physical exercise, which had been passed on to many of their elders. When the House of Lords debated the question of national physique last November, Lord Dawson of Penn remarked that they ought to distinguish between physical education and physical recreation. He (Lord Stanhope) wanted both. He wanted the physical education given in schools compulsorily, and in such a way that it would become a hobby and a physical recreation to children when they left school and in their later years. It was to provide facilities for physical development after leaving school that the Government had produced this Bill.

The scheme was entirely voluntary. It was based on existing organizations. The object was to mobilize voluntary effort and to join it with the extremely valuable work already being done by local authorities. The tradition of the best voluntary organizations was not that the training should be purely physical. They had also aimed at training minds, and their objective had been a healthy mind in a healthy body. That fitted in with the aim which had been constantly before the Board of Education for many years—that a child should be made fit mentally, physically, and socially for the life which lay before it. The scheme was in no sense military.

Although there was no mention of a drill hall in the Bill there was mention of gymnasia. In this country, being so largely urbanized, it was very difficult to provide open spaces where games could readily be played, and it was difficult for those who worked in great cities to find the time to get away when their work was over to play games except at the week-ends. Therefore a good deal of physical training had to be done in gymnasia. Particularly was that true during the winter months. In foreign countries they had always started with gymnasia and gymnastic clubs, and it was only comparatively recently that they had taken to games and outdoor sports. We in this country started at the other end, and it was only recently that we had realized the value of gymnastic training. While it was possible to become very fit by gymnastic training alone, or even by home training, this was extremely dull, and a national system which confined itself solely to gymnastic training and physical jerks would never be a success. Therefore gymnastic training would be joined with outdoor sports and outdoor games.

The Bill filled a very widely felt want. The knowledge of the value of physical training and physical culture was growing very rapidly throughout the country, and people needed greater facilities than they had at present. Even now that knowledge was nothing like so widespread as it should be. A very large number of people, including those who sometimes were responsible for the better-known public schools of the country, had not yet realized the value of physical training. A good deal had yet to be done to make its value more widely known, and power was taken in Clause 3 for the Board of Education, in consultation with the National Advisory Council and with the recommendation of the Grants Committee, to spend money on publicity and propaganda.

ADEQUATE NUTRITION BEFORE PHYSICAL TRAINING

Lord STRABOLGI welcomed the Bill. He said there ought to be a separate Ministry for the whole range of sport and physical culture, and everything in connexion with that side of human activities. With more and more people living in great cities something of that kind was absolutely necessary. They could spend money upon and organize, encourage, and stimulate physical culture, physical exercises, and recreation as much as they liked, but if they had a large section of the people undernourished or suffering from malnutrition all that would be wasted. Wholesome and sufficient food was more important for many of the poor people to-day than physical jerks. At present a large section of the population did not get sufficient food of the right quality to keep them in proper health.

Viscount BLEDISLOE said that on returning after five years' residence in New Zealand he was shocked at the relative neglect of national physique in this country. As president of the National Council of Social Service he welcomed the Bill because it definitely combined Government action with the work of voluntary organizations. He had had the opportunity, during the last two years, of seeing some admirable work of voluntary associations in every sphere of social activity, including physical training and welfare, in different parts of the country, and notably in the Special or Distressed Areas.

Lord ABERDARE said that the ideal behind this campaign was that of personal fitness: fitness for the greater enjoyment of life. He agreed with the whole structure of the Bill. He foresaw as a result of it a great strengthening of the moral fibre and character of the citizens of the country. That, among other things, should go a long way to reduce the number of inmates of the prisons and asylums. He foresaw better health, which would mean less medicine and drugs, and should go far to relieve the pressure on the hospitals. He foresaw better mental balance and alertness, which should have very far-reaching effects, even so far perhaps as to reduce the number of deaths on the roads. He (Lord Aberdare) would like to see all exercise taken in the fresh air, but with our climate gymnasia were generally a necessity. The Council on Physical Training was also concerned to provide for swimming, walking, cycling, and all forms of sport and exercise.

FUNCTIONS OF THE NATIONAL COLLEGE

The Government was taking steps to improve nutrition, which meant better housing and better working conditions as well as supplying extra food in certain cases. This country was one of the best fed in the world. No school child need be underfed, and ample powers and machinery existed for feeding children who needed it. The machinery could be used, and the responsibility lay largely with the teacher, who had emergency powers to put a child on the food or milk list until a doctor could be seen. No one would purposely put children through a course of physical training which would be too much for them, but this subject had been over-stressed and did not really arise under the Bill. A recent routine examination in London schools showed that of 184,733 children examined—these were unselected children—only 122 were found to be seriously ill-nourished, and only 1,500 seriously under-nourished. Recently he was told by a reliable social service worker that he saw no sign of under-nourishment in Battersea.

At the National College there must be an adequate supply of teachers, leaders, and organizers. It was necessary to see that facilities throughout the country were properly used, and to keep people enthusiastic. The National College was a vital necessity, not only for this purpose but for carrying out the essential medical research. Perhaps the College was the mainspring of the whole movement. The Council must arouse a personal ambition in everyone to be fit and healthy. For this purpose they would need to use all the resources of modern publicity, such as posters, booklets, and films. They must keep physical training and recreation steadily before the people and encourage them to use their leisure hours wisely.

LORD DAWSON AND A CREATIVE POLICY

Viscount DAWSON OF PENN said he agreed with Lord Aberdare that this Bill was of vast importance, because it gave method and structure to a policy which would aim at the promotion of the fitness of the nation. It was not only necessary in the interests of the present generation but of future generations that they should be given the best opportunity to turn those great potentialities which are particularly notable in the British race into actualities. We had only to go back to the time of the war to visualize what powers were in our blood. His belief was that if the youth of the nation got the opportunity of a training in fitness they would create a surprise by the rapid way in which they would respond, for they had a certain elasticity, not only of body but of mind, which made them respond very easily to advantages in the way of physical education.

Not only was this an important matter to the present generation, but a higher standard of physical fitness was necessary for the preservation of the nation in future generations. In securing a fit race in days gone by Nature did a large part of the work. She killed off the unfit, and only the fit survived. We were gradually undoing Nature's efforts by our developed sense of greater humanity and a more acute conscience towards those who were in distress and those who were weak. If we were to continue that policy of looking after the weaker brethren—he could not conceive anybody doubting that that was a right policy—we must remember that we were at the same time undoing Nature's plan for discarding the weaklings. It therefore became doubly important for us to set up a policy which would create fitness. If we created fitness and gave the proper opportunities it was inevitable that the more fit and efficient would come to the fore. Consequently, the more fit and efficient would lead the nation. The young were all hero worshippers, and would follow the leaders of their own generation. If, therefore, the opportunity was given to those who were most fit to move forward, as they inevitably would, in the company of their generation, they would set the pace of conduct and the standard of fitness for those who came after them.

He agreed with Lord Aberdare that from one point of view the National College was the pivot of this scheme. If we had a suitable college—he hoped it would be within reach of London—and if that college was erected in suitable and large enough grounds, we should be able to have a community of students, where they would learn the technique of their business, where men and women who were going to take up physical education as a whole-time job would be trained, and, in addition, where organizers and leaders for the voluntary organizations could receive a training of lesser duration and less strenuousness. He hoped also that we should be able to choose the best of the boys who were passing into adolescence and give them at this college a special six months' training, so that we might test out those who were potentially fit and be able to give those who turned out to be fit the opportunity of becoming the leaders of their generation in the walks of life which they individually pursued.

INSTRUCTION IN CHOOSING AND COOKING FOOD

On the subject of nutrition Lord Dawson said the distribution in this country of what was called malnutrition, but was, he thought, very often more accurately called under-nutrition, was patchy. If one went to the London elementary schools one was very much impressed with the great change

in the children. They were for the most part well nourished, even in the poorer districts; they were well dressed; they were a different generation from the children we used to see years ago. On the other hand, if one went to the distressed areas, where unemployment was rampant, he agreed that there were places where under-nourishment might be found, and in some places one could not get away from it; it was quite obvious. In connexion with under-nutrition we were apt to lose sight of the fact that so many of the people of this country who were the heads of households had never been taught how to choose food. They did not know how to spend their weekly earnings to good advantage. Further than that, so few of them know how to cook the food. If one compared this country with certain countries on the Continent the difference was manifest. If one went into the homes here one might see children sitting round a table, and instead of wholesome food which had been cooked for their consumption one saw tinned fish, tinned vegetables, and many other things which avoided the trouble of cooking. It was not only because the parents were unwilling to cook, in many instances they had never been taught how to cook. The result was that the homes of those of the industrial classes showed, more than one could wish, an under-nourishment which was partly due to their want of education in this particular. It was not due to any carelessness or to want of love for their children, because there was nothing more striking than the devotion to the children to be found in most homes in all classes in this country: it was due to want of knowledge. One of the best investments the Government could make would be to provide travelling vans to go about the country giving lessons and lectures on the choice and cooking of food. People were ready to receive such instruction, because they were beginning to understand that the choosing and cooking of food were no small matters in securing the proper nourishment of the young.

Earl STANHOPE, replying to the debate, said that the question of nutrition had been very adequately dealt with by Lord Dawson of Penn. He found himself in entire agreement with everything that Lord Dawson had said. He had not been very long in his present office, but he had already been making inquiries in the direction of which Lord Dawson spoke, and his view was that it was a question of education much more than a question of lack of money. A great deal could be done in that direction. Many people were inclined to quote the very high physical development in Germany, and yet the younger Germans were those born either during or just after the war, when the question of nutrition in Germany was one of great difficulty and when practically no children, whatever their class or wealth, had much chance of getting adequate food. The improvement had been due not to better nutrition so much as to physical training and physical development given by the sort of methods proposed under the Bill.

The Bill was read a second time.

Prevention of Silicosis

On June 29 Mr. JAMES GRIFFITHS asked the Secretary for Mines if his attention had been called to the discovery by research in Canada of a method of preventing silicosis by the use of certain dust mixtures. Captain CROOKSHANK replied that he had as yet no information except short general references in the Press. Until he had received and studied full particulars of these researches, which his Department was obtaining, he would not be in a position to make a statement.

Tuberculosis Care Committees in Wales.—Tuberculosis care committees have been established in six counties and one county borough in Wales. Sir KINGSLEY WOOD, who stated this on June 17, added that he had asked all the county and county borough councils in Wales to give early and careful attention to the provision for after-care.

Notes in Brief

The number of beds available in local authority institutions in Scotland for cases of infectious disease, including tuberculosis, was approximately 11,350 at the end of 1935 and 11,600 at the end of 1936.

Medical News

Dr. Thorvald Madsen, chief of the State Serum Institute of Copenhagen, has, for the seventh time, been elected president of the Health Committee of the League of Nations.

At a festival dinner in support of the Princess Elizabeth of York Hospital for Children, Shadwell, to be held at the Mansion House on July 15, with the Lord Mayor, Sir George Broadbridge, in the chair, the principal speaker will be the Archbishop of Canterbury.

The introductory address for the hundred and second session of the Middlesex Hospital Medical School will be given by Dr. George E. Beaumont on Wednesday, July 21, at 3 p.m. in the Scala Theatre, Charlotte Street; and the prizes will be distributed by Viscount Dawson of Penn.

The nineteenth annual meeting of the Mental Hospitals Association will be held at the Guildhall, London, on Tuesday, July 13, at 11 a.m. Papers will be read by Dr. T. C. Graves on "The Treatment of the Patient—First Things First," and by Dr. W. J. S. Reid on "The Outpatient Clinic for Treatment of Early Mental Cases."

The International Balneological Congress at Budapest has been postponed until October 7 to 14.

The postponed eleventh International Congress of Psychology will be held in Paris from July 25 to 31, with Professor Pierre Janet as honorary president, Professor Henri Pieron as president of the Executive Committee, and Professor I. Meyerson as general secretary. The headquarters of the Congress are at the Laboratory of Psychology of the Sorbonne.

Dr. George F. Buchan, medical officer of health for the borough of Willesden, was among those who received the distinction of honorary life membership of the Canadian Public Health Association conferred at its twenty-sixth annual meeting held recently in Toronto.

At Cheltenham College on Speech Day (July 3) Lord Willingdon unveiled a memorial tablet to Dr. E. A. Wilson on a wall of the new science laboratory. This bears the inscription "Edward Adrian Wilson, M.B., biologist and explorer; from boyhood a lover of Nature. He died with Scott on the return from the South Pole, March, 1912. Strong in will to strive, to seek, to find, and not to yield."

During the world exhibition at Paris 237 Congresses will be held, 18 of them medical.

The German State Medico-Historical Association intends to arrange an exhibition of medical caricatures in the autumn. Further information can be obtained from Kaiserin-Friedrich Haus, Robert Koch-Platz 7, Berlin, N.W.7.

Mr. Herbert Eason, M.S., F.R.C.S., who took up the duties of Principal of the University of London on July 1, has accepted the invitation of Lord Crewe and the committee to become a member of the Executive Committee of the British Institute in Paris in place of the late Sir Edwin Deller.

The Committee of Management of the Infants Hospital, Vincent Square, Westminster, S.W., announces that the age limit for patients at this hospital has been raised to 12 years, and that children from birth to 12 years of age are now eligible for treatment there.

The issues of the *Münchener medizinische Wochenschrift* for June 25 and of *Die medizinische Welt* for June 26 are devoted to the history of Göttingen University on the occasion of the 120th anniversary of its foundation.

The Japanese Government has recently appointed a committee to discuss the question of establishing a Ministry of Health for Japan.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Finance Department.

The TELEPHONE NUMBER of the British Medical Association and the *British Medical Journal* is EUSTON 2111.

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QUERIES AND ANSWERS

Mastitis of Puberty in the Male

Dr. F. E. COOMBES (Forest Gate, E.7) writes: In connexion with Dr. W. Paterson Brown's letter (*Journal*, June 5, p. 1188), a case of mine may be of interest. A male, aged 18, had mastitis of the right breast which did not respond to treatment; he was therefore sent to a surgeon. The night before his visit he had an acute attack of abdominal pain. The surgeon found an undescended testicle in the inguinal canal. When this was dealt with the mastitis cleared up spontaneously.

Reducing by the Book

"C. W. A." writes: With reference to Surgeon Lieutenant D. P. Gurd's note (June 12, p. 1240) headed "Reducing by the Book," I should like to ask what weight the book should be? The *Medical Directory* is about 6 lb.; is this sufficient?

Income Tax

University Examiner—Travelling Expenses

"OFFICIAL" inquires whether he can deduct the cost of travelling to act as a university examiner at a fee of £20 for the academical year. The work involves staying in the university town for a day or two.

*** An examinership is technically an appointment, and the emoluments are assessable under Schedule E. The expense of travelling, etc., to the place where the duties are performed is not allowable. It was refused by the High Court (Ricketts *v.* Colquhoun) in the case of a barrister incurring similar expenses in connexion with an appointment as Recorder. The harshness of the rule in such circumstances was recognized in the report of the recent Committee on the Codification of the Income Tax.

Tax on Official Quarters

"W. G." is a medical officer in one of the Government services, and as such has to occupy an official residence. He cannot sublet it, and regards it not as an official emolument, but rather as the reverse. He has been assessed for tax on the "annual value" of the premises. Is that correct?

*** In similar circumstances a bank manager or other employee not in Government service would not be liable. Unfortunately the position of an individual in the service of the Crown is specifically provided for in the statutes (Schedule A, No. 7, Rule 11), and we have to advise our correspondent that he is legally liable to the tax. We may perhaps add that we understand that the amount on which the tax is payable ranks for pension, so that the Government is at least consistent.

LETTERS, NOTES, ETC.

"V.U.A."

Mrs. CLARA HARDY (7, Darley Avenue, West Didsbury, Manchester) writes: Shocked by newspaper accounts of children fatally burned through being left in a house alone, I formed the society known in London as Voluntary Unofficial Aids. These women, without any charge, mind children for short periods, visit the lonely and the sick, and escort children to hospitals, etc. There are now eight branches in different parts of the country, but London needs a new honorary organizer. There are no funds, but a certain amount of time and money is needed by the organizer. I will gladly give details to anyone willing to undertake this interesting work.

A Remedy for Hay Fever

Dr. REGINALD F. WHITE (Nailsea, nr. Bristol) writes: As a sufferer for many years with hay fever I have naturally tried all the recognized remedies, with very little or no relief, and would suggest a simple remedy which I have devised and tried with considerable success. Two small plugs of "sorbo" sponge are cut to suitable size so as to fit comfortably inside the nostrils. These are worn continually during the day and are removed only for cleansing. I have worn such plugs for a whole day without changing and without the slightest discomfort. As an added safeguard, to prevent the plugs being accidentally drawn into the nose by a sudden violent inspiration, they can be easily fastened across the septum by fine silk. I do not advise the plugs to be worn at night, but as an alternative a thin gauze mask is tied over the nostrils. The advantages of this remedy are: (1) easy and rapid cleansing; (2) minimum amount of discomfort; (3) minimum interference to respiration; (4) simple cleansing in cold water only is necessary; (5) maximum comfort and relief. My own routine consists of the above, combined with 1/4 grain of ephedrine by mouth two or three times a day. The above procedure has enabled me to do my work in comfort, and, furthermore, I have been able to enjoy the open air and sunshine, which was otherwise absolute misery.

Counting Respirations

Dr. J. P. HASTINGS (Auckland, N.Z.) writes: It is with no little diffidence that I venture to write this letter. Some time back an article appeared in the *Journal* the purport of which was to encourage general practitioners to write concerning their medical experiences. This is my excuse for bringing under your notice an auscultatory method of counting the respirations. For some years now, in diseases of the respiratory tract, I have made a practice of noting the respiratory rate by means of listening with the stethoscope for a period of at least one minute. I have found this method more satisfactory than the usual clinical procedure.

Short-wave Therapy

Dr. P. P. DALTON (London, W.1) writes: I am glad to see by Dr. H. J. Taylor's letter in your issue of June 26 that his previous letter was not intended to be a counterblast to my published work. I do not follow the rest of his letter. What D'Arsonval claimed for diathermy in 1891–6 seems to me to be as relevant as is what Gladstone said in 1888! Short-wave therapy had never been heard of in 1891–6, and what D'Arsonval then claimed for diathermy has nothing to do with what I now claim for low-intensity short-wave therapy, which is not a diathermic effect at all. I deny the statement that I am putting forward "claims" as "evidence," old or new. I have put forward "evidence" on which to base a "claim"—namely, that with low-intensity short-wave therapy "an influence has been exerted and an effect obtained." The fact that Audiat, Delherm, and Fischgold made similar claims surely does not prove my claim to be false. Dr. H. J. Taylor professes to be unable to see "that any new evidence has arisen because such claims have been made before." Surely the making of a claim does not prevent new evidence arising. He having published his opinion that short-wave therapy has no specific effect does not want, as he expressed himself to me after seeing one of my experiments, "to be forced to eat his own words"; but, as I told him in reply, "it is better that one scientist should be forced to eat his own words than that science should be deprived of knowledge." I appeal to Dr. Taylor to look at the new evidence with a seeing, not an unseeing, eye.